NAMIBIA STATE OF SKILLS **DEMAND AND SUPPLY REPORT**

NOVEMBER **2025**

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Namibia Investment Promotion & Development Board

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ACKNOWLEDGEMENTS

This report was the result of a collaborative effort by a multidisciplinary team. We express our sincere gratitude to the Talent Innovation and Productivity team, and their respective stakeholders for their invaluable contributions to the completion of this report, namely:

- Deloitte Namibia
- Namibia Statistics Agency
- National Council for Higher Education
- World Economic Forum Future of Jobs Report 2025
- Ministry of Education, Innovation, Youth, Sports, Arts and Culture
- Namibia Training Authority
- Ministry of International Relations and Trade
- Ministry of Industries and Mines and Energy
- Ministry of Justice and Labour Relations
- National Commission on Research Science and Technology (NCRST)
- Ombu Capital (PTY) Ltd

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HIGHLIGHTS

1. INTRODUCTION

The report objectives aims to:

- Assess the alignment between skills supply and labour market
- Identify skills gaps and mismatches
- Monitor and evaluate training outcomes
- Highlight areas for skills development and future skills

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2. Signals of demand for skills
3. Understanding future demand

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2. Education
3. Labour Market Profile

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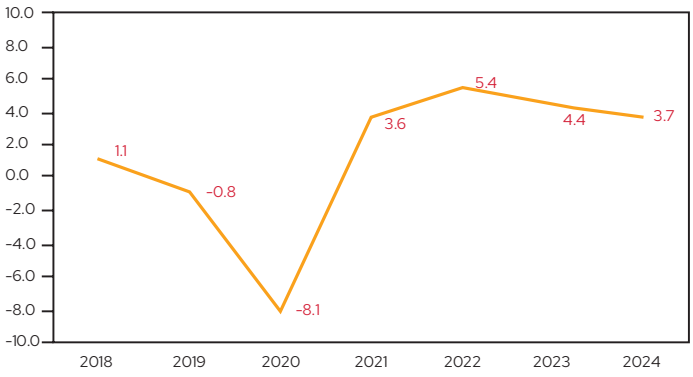
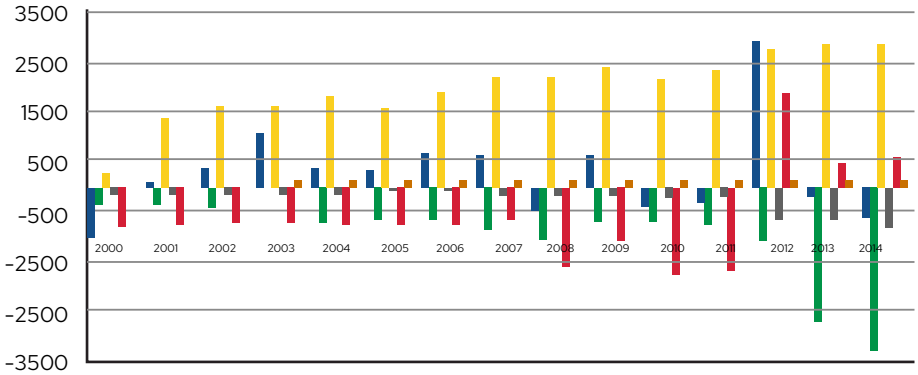
- Economy should focus on diversifying Agriculture, Forestry and Fishing, Wholesale and Retail, repair of motor vehicle, Manufacturing, new emerging sectors, such as Renewable Energy, Arts,Entertainment and Recreation and 4IR
- Accelerate the implementation of economic diversification
- Structural economic transformation from a simple to a complex economy

GDP Growth Rate



The image depicts Namibia's GDP growth rate from 2018 to 2024, highlighting a period of economic volatility. After modest growth of 1.1% in 2018, the economy slipped into a slight contraction of - 0.8 percent in 2019, followed by a significant decline of - 8.1 percent in 2020 due to the COVID-19 pandemic and associated global disruptions. A strong rebound occurred in 2021, with growth rising to 3.6%, followed by a peak of 5.4% in 2022, driven by recovery in key sectors such as mining and construction. Growth slowed slightly to 4.2% in 2023 and then slightly declined to 3.7 percent in 2024, reflecting a stabilising economy post-pandemic.[1]

Expenditure



Growth in non-mineral sectors, especially tourism, is expected to strengthen, supported by monetary policy easing and lower inflation. [2]

[1] Namibia Statistics Agency: Annual National Accounts, 2024.
[2] World Bank

4. LABOUR MARKET

Working Age Population (15 Years +)
1,876,122

Labour Force
867,247
(46.2%)

Outside Labour force
1,008,875
(53.8%)

Employed
546,805
(63.1%)

Unemployed
320,442
(36.9%)

Potential labour force
341,931
(33.9%)

Do not want employment
666,944
(66.1%)

Unavailable Jobseekers
10,929
(3.2%)

Available potential Jobseekers
331.002
(96.8%)

Studying
241,125
(36.2%)

Family Responsibility
235,954
(35.4%)

Retired, Pensioners
75,350
(11.3%)

Illness/Injury/Disability
26,619
(4.0%)

Other reason
87,896
(13.2%)

Combined Unemployed Rate & Potential labour force 662,373 (54.8%)

Source: Namibia Statistics Agency, PHC Report, 2023.

5. SKILLS SUPPLY

Basic education in Namibia is structured within a formal 7-3-2 system, comprising seven years of primary education, three years of junior secondary education, and two years of senior secondary education.

Namibia's tertiary education system is still supplying traditional occupations, not aligned to economic and emerging sectors, resulting in skills mismatches and oversupply.

Average learner teacher ratio is 25:1

Critical skills are required in manufacturing, agriculture, automotive, IT and the energy sector.

Namibia requires specialisation and certifications in almost all occupational fields.

Primary education completion slightly declined from 48.5 percent (2011) to 44.7 percent (2023) while secondary education completion rose from 20.5 percent to 24.8 percent , in the same period.

Tertiary education attainment has increased from 5.8 percent in 2011 to 11.8 percent in 2023 nationally, indicating progress but still below labour market needs.

Indicator /Year	Primary (Grade 1 -7)	Lower Secondary (Grade 8-9)	Upper Secondary (Grade 10-11)
Promotion Rate	82.9%	69.7%	47.3%
Repetition Rate	15.9%	25.0%	15.3%
School Leaving	1.1%	5.4%	37.5%

Source: Ministry of Education, Arts and Culture, EMIS Report 2024

TVET and General High Education Ratio

- For every 28 learners there is approximately 1 TVET trainee.
- For every 28 learners in basic education, there are approximately 11.69 students in Higher Education Institutions

1/28 TVET trainee.

11.69/28 students in Higher Education Institutions

6. SKILLS DEMAND

- Over 73 occupations have been identified as in demand to date, reflecting a dynamic and evolving labour market.
- The highest concentration of occupations are in
  - Agriculture, Forestry and Fishing
  - Wholesale and Retail trade
  - Repair of motorcycles and motor vehicles
  - Manufacturing
  - Administrative and support service activities
  - Activities of households as employers
  - Education
  - Public Administration and Defence
  - Communication
  - Construction and other services activities
  - Human Health and social work activities
  - Transportation and storage
  - Financial and insurance activities.

- Emerging sectors with growth potential that employees less than 1% are Arts, entertainment and recreation, Water supply; sewerage, waste management, Electricity, gas, steam and air conditioning.

Occupations in Demand in the Namibian Labour Market

Agriculture, forestry and fishing

- Farmer (Crop & Horticulture Production)
- Farmer (Animal Husbandry)
- Machinery Operator/ Farm Mechanic
- Client Executive

Administrative and support services

- Office Administration Consultant
- Chief Admin Officer
- Data Entry Clerk
- Secretary/ Executive Secretary
- Customer Service Rep

Transportation and storage

- Logistics Manager
- Terminal Manager
- Warehouse Clerk
- Loadmaster
- Branch Manager
- Buyer

Professional, scientific and technical

- Strategic Executive:
- Human Capital, Human Resources Practitioners
- Investment and Industrialization
- Manager: Governance, Risk & Compliance
- Technologist, Laboratory Technician: Physics,Animal Scientist

Human health and social work activities

- Occupational Health & Safety Officer
- Firefighter & Rescue Operator
- Namibia Health & Safety Manager
- Medical Technologist

Financial and Insurance activities

- Risk and Audit Manager
- SAP EHS Consultant (M/F)
- Insurance Intermediary
- Tax Assistant Manager

Accomodation and food services

- Hospitality Manager
- Kitchen Manager
- Food & Beverage Manager
- Snr Tour Consultant
- Tour Guide
- Maintenance Manager

Education

- Professor in Digital Humanities and English (Humanities and Arts Department)
- Lecturer (Occupational Therapy)
- Professor/Associate
- Lecturer: Public Administration
- Examination Officer

Source:
Namibia Labour Market Adverts from Linked, Newspapers, & Recruitment Agencies- November 2024- June 2025

7. FUTURE SKILLS

Future occupations of priority sectors were identified after the outputs of the Harvard Growth Lab study and other sources which examines the trends that will define future skills.

Renewable and non-Renewable Energy

- Wind turbine technicians
- Algae biofuel specialist, Hydrogen fuel cell engineers
- Petroleum and resource

Agriculture

- Genetic Engineering
- Carbon sequestration techniques
- Hydroponics and Aquaponics

Tourism

- Chef,
- Drone operation
- Aerial photography
- Virtual and augmented reality for tourism

Transport and Technology

- Multimodal and international logistics management
- Drone optic automation and robotics
- Blockchain for supply chain transparency

E-Commerce

- Data analytics and customer insights
- Fintech knowledge
- Voice commerce.

Services (Digital and global business)

- Advanced Digital Marketing and SEO
- Data Analytics and Business Intelligence
- E-Commerce Development and Management
- User Experience (UX)

Communication & Technology

- Threat Intelligence and Risk Management
- Ethical Hacking and Penetration
- Architecture Hybrid
- Cloud Management

Culture and Creative Industry

- Advanced Multimedia Skills
- 3D Modeling and Animation
- AI-Driven Art and Design
- Coding for Creative Application

Source:
Namibia Labour Market Adverts from Linked, Newspapers, & Recruitment Agencies- November 2024- June 2025

8. CRITICAL SKILLS

01

Manufacturing

Electrical and mechanical control technicians, Machine operators, Laboratory Quality control specialists, Food and beverages, Production quality and safety supervisors, Maintenance Technicians, Electrical and mechanical technicians, Lathe technicians,

02

IT/4IR

Cloud computing, Artificial intelligence, Robotics, Digital literacy, Advanced coding, Advanced cybersecurity and programming, Instrumental skills, Digital collaboration and communication skills, Basic coding skills

03

Agriculture

Horticulture (Cereal and grain farming), Industrial crops (cotton, tobacco, sugarcane), Oilseed production (e.g. sunflower, soybeans) Dairy and Poultry farming, Precision agriculture, Smart irrigation systems, Drone and satellite technology

04

Maritime

Marine Engineer, Ship's Master Engineers (civil and maintenance) Mechanical Engineer, Marine Pilot, Maritime Trainer/Assessor Stevedore - Crane Driver, Equipment Operators, Paramedics

05

Oil and Gas

Dive technician, Mud logging engineer, ROV supervisor, Pilot technician, Mechanical technician, Slickline Engineer, Wireline Engineer, Coiled tubing technician, Subsea technician, Grit blaster, Derrickman

9. FINDINGS

01 The Namibian Labour Market has a structural imbalance between the skills supplied and demand

02 The Namibia Standard Classification of Occupations to be updated and align to various national reporting documents

03 Namibian youth and graduate unemployment needs to be urgently addressed

04 The MSME skills are not aligned to curriculum development at HEIs

05 Attract high valued skills with residency in emerging sectors to address skills shortage

10. PROPOSED RECOMMENDED ACTIONS

Action	Proposed Owner
Review existing laws for 4IR relevance, update obsolete ones, and identify gaps to facilitate tech advancement, global connectivity, and labour market shifts.	Ministry of Information and Communication Technology, Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Expedite 4IR infrastructure, leveraging current efforts to expand ICT networks and operationalize a Special Purpose Vehicle for ICT delivery.	Ministry of Information and Communication Technology
Align the Namibian Classification of Occupations with HEIs, Labour Force surveys, and economic sectors to meet labour market skill demands.	Ministry of Justice and Labour Relations, Ministry of Education, Innovation, Youth, Sports, Arts and Culture, Namibia Statistics Agency
Create HEI/TVET specialised courses and certifications aligned with labour market demands for re-skilling and upskilling.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Form industry/sector committees to regulate and quality assure training on NQF Levels 7-10.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Critical Skills Identification: Develop a national system for identifying critical skills, supported by a strategic implementation plan and to ease the facilitation of visas.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture, Ministry of Home Affairs, Immigration, Safety and Security
Offer grants and scholarships to STEM students to boost TVET and HEI enrollments in these fields.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Implement the teacher-to-learner ratio to prevent overcrowding and enhance foundational skills (literacy, digital literacy, numeracy)	Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Realign education, from basic to tertiary and lifelong learning, crucial for the future of work and the 4IR.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture
Integrate mandatory digital literacy and technical skills into Basic, TVET, and Higher Education curricula, empowering youth to capitalize on opportunities in greener, digital economies.	Ministry of Education, Innovation, Youth, Sports, Arts and Culture, Namibia Training Authority, Ministry of Information and Communication Technology
Align MSME growth with National Development Strategies and economic sectors for sustainable economic participation	Ministry of Industries, Mines & Energy
Create an MSME Entrepreneurship Academy and incubation center to foster self-employment.	Ministry of Industries, Mines & Energy
High Graduate Unemployment: Expedite the National Youth Tax allowance, WIL Framework and Internship programs (apprentices, students, graduates, school leavers) to provide professional and industrial experience, facilitating youth transition into the workforce).	Ministry of Finance, Ministry of Education, Innovation, Youth, Sports, Arts and Culture
High Youth Unemployment, harness the potential of a growing youth population with foundational skills	Ministry of Finance, Ministry of Education, Innovation, Youth, Sports, Arts and Culture, NPC
Boost labour force surveys to quarterly, or at least annually, for timely supply and demand data..	Namibia Statistics Agency

LIST OF ACRONYMS

4IR	Fourth Industrial Revolution
EMIS	Education Management Information System
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
HEI/s	Higher Education Institution/s
ILO	International Labour Organisation
ISCO	International standard classification of occupations
NASCO	Namibian Standard Classification of Occupations
NCHE	National Council for Higher Education
NIEIS	Namibia Integrated Employment Information System
Non-STEM	Not including Science, Technology, Engineering and Mathematics
NSA	Namibia Statistics Agency
NSSC-AS	Namibia Senior Secondary Certificate Advanced Subsidiary Level
NSSCO	Namibia Senior Secondary Certificate Ordinary Level
NTA	Namibia Training Authority
OECD	Organisations for Economic Cooperation and Development
PISA	Programme for International Student Assessment
STEM	Science, Technology, Engineering and Mathematics
TVET	Technical Vocational Education Training
VR/AR	Virtual Reality / Augmented Reality
WEF	World Economic Forum

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DEFINITIONS

Armed Forces Occupations	Armed forces occupations include all jobs held by members of the armed forces. Members of the armed forces are those personnel who are currently serving in the armed forces, including auxiliary services, whether on a voluntary or compulsory basis, and who are not free to accept civilian employment and are subject to military discipline. Included are regular members of the army, navy, air force and other military services, as well as conscripts enrolled for military training or other service for a specified period.
Clerical Support Workers	Clerical support workers record, organise, store, compute and retrieve information, and perform a number of clerical duties in connection with money-handling operations, travel arrangements, requests for information, and appointments. Competent performance in most occupations in this major group requires skills at the second ISCO skill level.
Craft and Related Trades Workers	Craft and related trades workers apply specific technical and practical knowledge. The work is carried out by hand and by hand-powered and other tools which are used to reduce the amount of physical effort and time required for specific tasks, as well as to improve the quality of the products. The tasks call for an understanding of all stages of the production process, the materials and tools used, and the nature and purpose of the final product.
Critical skills	Essential competencies required for economic growth and development, often in high-demand sectors
Economic recession	A significant decline in economic activity across a country lasting for months or years, marked by reduced GDP, employment rates, and consumer spending
Elementary Occupations	Elementary occupations involve the performance of simple and routine tasks which may require the use of hand-held tools and considerable physical effort. Most occupations in this major group require skills at the first ISCO skill level.
Future skills	Skills anticipated to be in high demand due to technological advancements, economic shifts, or evolving industry trends (e.g., AI, data analytics)
Graduates	Individuals who have successfully completed an educational program or degree, contributing to the skilled labour supply
Labour market profile	A comprehensive overview of employment trends, workforce characteristics, unemployment rates, and sectoral dynamics within a specific region or country
Managers	Managers plan, direct, coordinate and evaluate the overall activities of enterprises, governments and other organizations, or of organizational units within them, and formulate and review their policies, laws, rules and regulations. Competent performance in most occupations in this major group requires skills at the fourth ISCO skill level, except for Sub-major group 14: Hospitality, Retail and Other Services Managers, for which skills at the third ISCO skill level are generally required.
Plant and Machine Operators, and Assemblers	Plant and machine operators, and assemblers operate and monitor industrial and agricultural machinery and equipment on the spot or by remote control; drive and operate trains, motor vehicles and mobile machinery and equipment; or assemble products from component parts according to strict specifications and procedures. Competent performance in most occupations in this major group requires skills at the second ISCO skill level. The work mainly calls for experience with and an understanding of industrial and agricultural machinery and equipment as well as an ability to cope with machine-paced operations and to adapt to technological innovations.
Productive labour force	A workforce that efficiently contributes to economic output through high levels of skill application, innovation, and productivity
Professionals	Professionals increase the existing stock of knowledge; apply scientific or artistic concepts and theories; teach about the foregoing in a systematic manner; or engage in any combination of these activities. Competent performance in most occupations in this major group requires skills at the fourth NASCO skill level.
Scarce skills	refer to specific skills or expertise that are in high demand but have a limited supply of qualified and experienced individuals.
School enrollments	The number of students registered in educational institutions at various levels, which impacts future labour supply and workforce development
Service and Sales Workers	Service and sales workers provide personal and protective services related to travel, housekeeping, catering, personal care, or protection against fire and unlawful acts, or demonstrate and sell goods in wholesale or retail shops and similar establishments, as well as at stalls and on markets. Competent performance in most occupations in this major group requires skills at the second NASCO skill level.

Skilled Agricultural, Forestry and Fishery Workers	Skilled agricultural, forestry and fishery workers grow and harvest field or tree and shrub crops, gather wild fruits and plants, breed, tend or hunt animals, produce a variety of animal husbandry products; cultivate, conserve and exploit forests; breed or catch fish; and cultivate or gather other forms of aquatic life in order to provide food, shelter and income for themselves and their households. Competent performance in most occupations in this major group requires skills at the second NASCO skill level.
Skilled labour	Refers to jobs that require a high amount of training, education and experience to perform. This training can come in the form of specific educational credentials (e.g., doctors who require a medical degree) or less formal technical or vocational training (as in the case of coding boot camps or training and apprenticeship programs for computer numerical control machinists).
Skills gap	The difference between the skills employers need and the skills available in the workforce, often hindering productivity and economic growth
Skills Mismatch	A discrepancy between the skills possessed by workers and the skills demanded by employers, leading to inefficiencies in the labour market
Skills oversupply	A situation where the number of workers with certain skills exceeds the demand for those skills, resulting in underemployment or unemployment
Skills supply	The availability of individuals with specific qualifications, knowledge, and competencies required to perform particular jobs in the labour market
Technical and Vocational Education and Training (TVET)	Education and training programs designed to equip individuals with practical skills, knowledge, and competencies required for specific trades, occupations, or industries. It focuses on preparing learners for employment, entrepreneurship, or further education in technical fields and plays a vital role in driving economic growth and addressing unemployment
Technicians and Associate Professionals	Technicians and associate professionals perform technical and related tasks connected with research and the application of scientific or artistic concepts and operational methods, and government or business regulations. Competent performance in most occupations in this major group requires skills at the third NASCO skill level.

EXECUTIVE SUMMARY

Windhoek, Namibia - A comprehensive report on the state of skills supply and demand in Namibia towards 2025 reveals a significant and persistent mismatch between the skills possessed by the workforce and those required by the evolving labour market. This disparity, eaxacerbated by challenges in the education system and rapid global mega-trends, poses a considerable hurdle to the nation's economic growth, diversification efforts, and ability to enhance productivity and global competitiveness.

The report, compiled by the Namibia Investment Promotion & Development Board (NIPDB) and other partners, aims to assess the alignment between skills supply and labour market demand, identify skills gaps, evaluate education and training outcomes, support economic development and job creation, and highlight priority areas for skills development.

Key Challenges and Economic Context

Namibia's economy, while showing resilience with projected GDP growth of 3.9% in 2025, is navigating a structural transformation from a simple to a more complex economy[3]. Key focus areas for economic growth include renewable energy, MSME development, transport and logistics, and the accelerated implementation of the Fourth Industrial Revolution (4IR). However, the nation grapples with a high unemployment rate of 36.9%, with youth unemployment alarmingly high at 44.4 percent[4]. This coexists with widespread reports of skills shortages across critical economic sectors.

Furthermore, the country's reliance on imports and a less complex economy currently limit the demand for highly specialized know-how and productive capabilities.

Skills Supply and Demand Dynamics

Supply-Side Challenges:

- **Education System:** While Namibia has made strides in expanding access to education, issues persist concerning the quality and responsiveness of the education and training system, from basic education through to Technical Vocational Education and Training (TVET) and higher education. Secondary education completion rose modestly from 20.5 percent in 2011 to 24.8 percent in 2023, while tertiary education attainment increased from 5.8 percent to 11.8 percent in the same period, still falling short of labour market needs. High underperformance rates in national exams (nearly 80 percent in 2023 for NSSCO and NSSCAS) severely limit the pipeline of qualified individuals for further education and skilled employment.

- **TVET System:** The TVET sector, crucial for skills development, shows a significant gap between enrollment and graduation rates; for instance, in 2020, only about 14 percent of enrolled students graduated[6]. While TVET predominantly supplies skills in Manufacturing, Construction, Administration, and Tourism, there's a need to align curricula with emerging global labour market trends, particularly in digital technology.

- **Higher Education:** HEIs have seen increased enrollment but face challenges with low and fluctuating graduation numbers, indicating system inefficiencies and high dropout rates. There's a noted oversupply of graduates in fields like business management, health and social services, education and training, and public , while high-growth sectors such as agriculture, wholesale/retail trade, and manufacturing are undersupplied with skills such as agriculture and nature conservation, manufacturing, engineering, physical planning[7].

Demand-Side Dynamics:

- **Current Demand:** The highest concentration of in-demand occupations lies in Agriculture, Forestry And Fishing, Wholesale and Retail Trade, Administrative and support service activities, Education, and Public Administration. Emerging sectors like Arts, Entertainment, and Recreation, as well as Water supply and Electricity, currently employ less than 1% of the workforce but offer growth potential.

- **Future Skills:** Globally, technological change, the green transition, geoeconomic fragmentation, economic uncertainty, and demographic shifts are reshaping labour markets. Skills related to AI and big data, networks and cybersecurity, and technological literacy are anticipated to be the fastest-growing[8]. However, Namibia currently faces challenges in adopting 4IR technologies due to inadequate skills, lack of capital, and insufficient infrastructure[9]. The report identifies future skills needed in sectors like renewable energy, chemicals and basic materials, machinery and electronics, digital and global business services, communication and technology, and the culture and creative industry.

The report concludes that concerted, collaborative efforts among the government, educational institutions, industry stakeholders, and the public are imperative to bridge the skills gap. By investing strategically in its human capital, Namibia can unlock its full economic potential, foster inclusive growth, and build a more prosperous and equitable future for all its citizens.

[3] BON Annual Economic Outlook Report 2025
[4] NSA PHC 2023
[5] Impact of education on sustainable economic development in emerging markets- the case of Namibia's tertiary education system and its economy, 2020

[6] NTA supplied data
[7] NAMIBIA HIGHER EDUCATION STATISTICAL YEARBOOK (NHESY), 2016-2020P
[8] https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf
[9] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

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ABOUT NAMIBIA

1. ABOUT NAMIBIA

Nestled in the vast landscapes of Southern Africa, Namibia emerges as a nation of striking contrasts and compelling opportunities. Bordered by Angola, Zambia, Botswana, South Africa, and the expansive Atlantic Ocean with its 1,500-kilometer coastline, this country spans an impressive 824,292 square kilometers. Despite its considerable size, Namibia is home to a relatively small population of approximately 3.02 million people, resulting in it being the third least densely populated country globally, with an average of just 3.7 people per square kilometer[10].

The official language of Namibia is English, facilitating international communication and business. However, the country thrives on its rich cultural tapestry, woven from 13 different local languages and diverse people groups[11]. This linguistic and cultural diversity is complemented by a strong emphasis on education, evidenced by the literacy rate for persons aged 15 years + is 87.3 %[12]. The nation operates on Greenwich Mean Time (GMT) + 2. Its capital city, Windhoek, situated in the Khomas Region, is home to an estimated 494,605 people as of 2023[13] and has earned recognition as the 9th most affordable city globally for expatriates[14].

Since gaining independence on March 21, 1990, Namibia has established itself as a democratic and politically stable nation, consistently upholding the rule of law. This stability provides a solid foundation for its economic activities. The national currency, the Namibian Dollar (N$), is pegged at a 1:1 ratio with the South African Rand (ZAR), and as of March 3, 2025, the exchange rate stood at N$18.63 to US$1. In 2023, Namibia's Gross Domestic Product (GDP) was recorded at US $ 12.36 billion, with a GDP per capita of US\$4,090.08. The nation's cumulative trade figures for 2024 indicated imports valued at US$8.8 billion (N$161.4 billion) and exports reaching US$6.5 billion (N$118.9 billion)[15]. Furthermore, Namibia boasts a well-developed financial services sector, contributing to its overall economic resilience[16].

A cornerstone of Namibia's development is its globally competitive infrastructure. The country's road network is particularly noteworthy, ranking 1st in Africa for quality and connectivity for five consecutive years, as highlighted in the World Economic Forum (WEF) Competitiveness Report of 2019[17]. Maritime trade is well-supported by the Port of Walvis Bay and the Port of Lüderitz, while international air connectivity is provided by Hosea Kutako International Airport near Windhoek and Walvis Bay International Airport. Numerous road entry points further facilitate regional access, including Noordoewer and Ariamsvlei in the south, Buitepos (Mamuno) in the east, Ngoma and Wenela in the northeast, and Oshikango, Katwitwi, and Omahenene in the north[18].

Beyond its robust economic and infrastructural framework, Namibia is distinguished by its extraordinary natural heritage and commitment to conservation. It proudly stands as one of the first countries in the world to have enshrined environmental protection within its constitution, earning it a reputation as a global leader in conservation efforts, particularly through its extensive network of community-based conservancies. This dedication is reflected in its thriving wildlife populations, including the world's largest cheetah population and the largest black rhino population[19].

The Namibian landscape is a realm of superlatives. It is home to some of the planet's largest sand dunes, most famously the Sossusvlei dunes within the ancient Namib Desert, the oldest desert in the world. The country also hosts the majestic Fish River Canyon, the second-largest canyon on Earth, and Twyfelfontein, a site renowned for one of Africa's most significant concentrations of rock petroglyphs. Along its rugged Skeleton Coast lies Skeleton Bay, also known as Donkey Bay, celebrated globally for offering one of the longest and most formidable left-hand barreling waves[20].

The nation's cultural richness is equally profound, being home to the San people, considered Africa's oldest tribe with a history spanning over 30,000 years, and the OvaHimba people, distinguished by their traditional red ochre body paint and intricate adornments[21].

In terms of resources and industry, Namibia is recognized for its fine gemstone-quality diamonds[22] and was a pioneer in Africa as the first country to export beef to major international markets including China, the European Union, and the United States of America[23]. Moreover, Namibia possesses one of the highest solar energy potentials globally, signaling a bright future for renewable energy development[24].

Namibia's commitment to good governance and a favorable investment climate is reflected in numerous international rankings. It is consistently cited as one of the world's most politically stable countries and ranks highly in Africa for its rule of law[25], overall governance[26], and press freedom (2nd in Africa, 34th globally, World Press Freedom Index 2024)[27]. The nation also leads Africa in closing the gender gap (8th globally, World Economic Forum 2019)[28].

[10] https://www.britannica.com/place/Namibia
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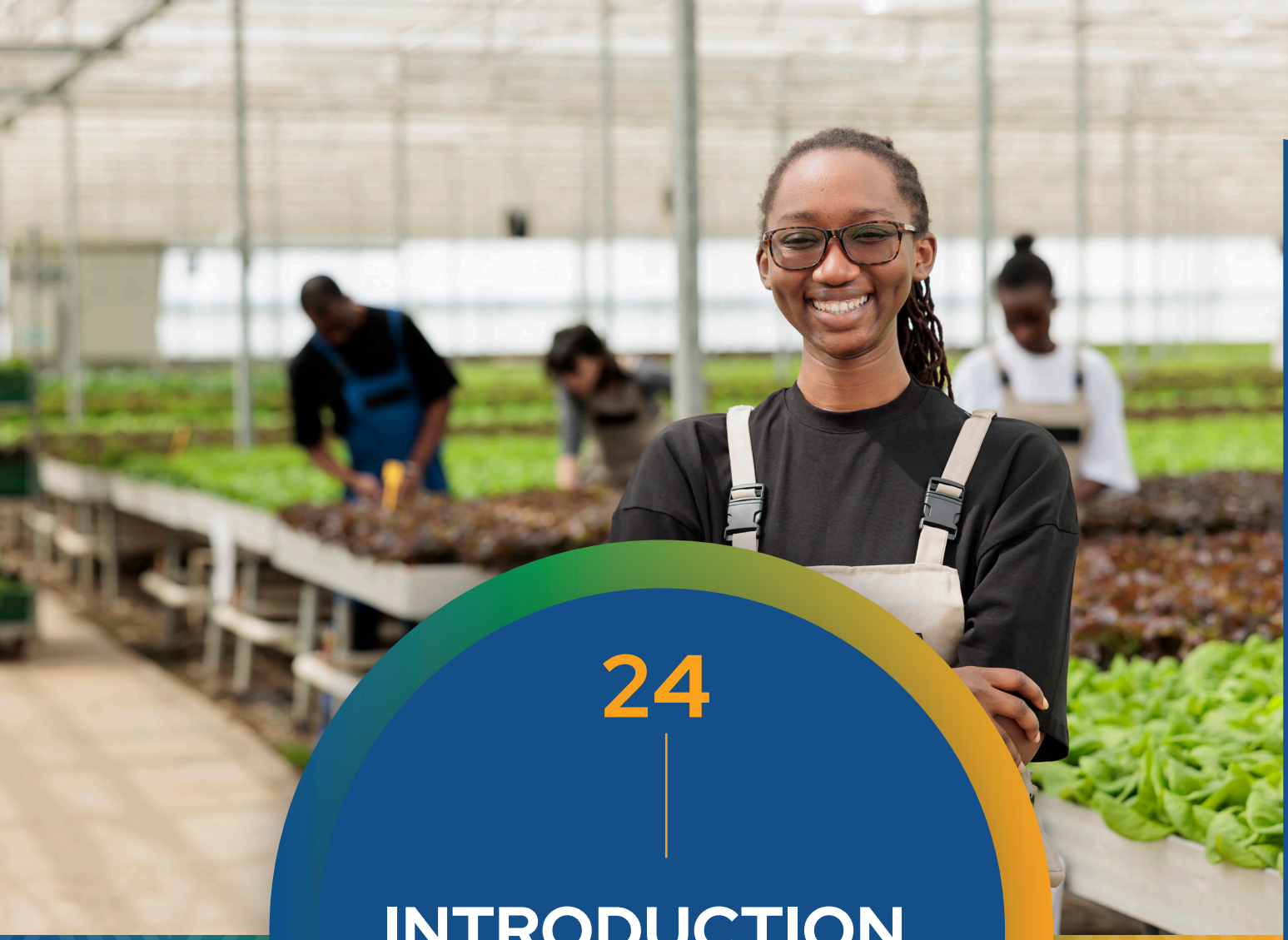
[21] https://www.namibia-safaris.com/himba-tribe/#:~:text=Other%20Tribes%20in%20Namibia%20Worth,traditions%20and%20symbolic%20rock%20art.
[22] https://economy.com.na/diamonds/
[23] https://www.africanews.com/2020/02/21/namibia-becomes-first-african-country-to-export-red-meat-to-united-states//
[24] https://namibiatradenetwork.com/renewable-energy-potential-in-namibia/
[25] https://worldjusticeproject.org/sites/default/files/documents/Namibia_2.pdf
[26] https://iiag.online/locations/na.html#:~:text=Scores%2063.9%20out%20of%20100.0,for%20Southern%20Africa%20(54.6).
[27] https://www.idea.int/democracytracker/country/namibia#:~:text=Namibia%20records%20highest%20voter%20turnout,vote%20in%20the%202024%20elections.
[28] https://www.weforum.org/stories/2024/06/how-namibia-is-helping-its-most-sustainable-companies-compete-globally/#:~:text=Namibia:%20Climate%20and%20growth%20in,can%20help%20in%20this%20respect.

For businesses and investors, Namibia offers an attractive environment, ranking 1st in Africa for its business and labour environment (Ibrahim Index of African Governance 2024) [29] and for investment attractiveness in the mining sector (Fraser Institute's Survey of Mining Companies 2023)[30]. Its top position in the Greenfield FDI Performance Index in Africa in 2022 further underscores its appeal. The country is also lauded for its safety and personal freedoms, ranking 2nd in Africa for Personal Freedom (RMB Where to invest in Africa Report 2024), 3rd for Rights, and as the 4th safest country in Africa (Ibrahim Index of African Governance 2024). It consistently features among the top 10 safest destinations in Africa and ranked 7th in Africa for Safety in the Global Peace Index (2023). While vigilance is always necessary, Namibia also performs relatively well in transparency, ranking as the 6th highest scorer in Africa in the Corruption Perception Index (Transparency International 2022). Finally, the tourism sector remains a significant contributor to the economy, accounting for approximately 6.9% of Namibia's GDP in 2023[31].

[29] https://mo.ibrahim.foundation/sites/default/files/2024-10/2024-index-report.pdf

[30] https://chamberofmines.org.na/wp-content/uploads/2024/05/CoM-Position-on-Namibias-Performance-in-the-2023-Fraser-Survey-of-Mining-Companies.-20.05.2024-Final.pdf

[31] https://ippr.org.na/wp-content/uploads/2024/07/Namibia-QER-Q2-2024-Final.pdf



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INTRODUCTION

2. INTRODUCTION

In recent years, skills development has become a priority among developed and developing countries alike. Having a skilled workforce has been recognized as paramount to boosting competitiveness in an increasingly global and interdependent economic environment, fostering innovation and business creation and increasing productivity. As individuals with the right skills and knowledge are more likely to find employment, raise incomes, and improve standards of living[32]. A skilled workforce is the bedrock of a thriving economy. Recognizing this, Namibia has prioritized skills development as a means to enhance competitiveness, foster innovation, and drive sustainable economic growth. This report presents a comprehensive assessment of the current state of skills supply and demand in Namibia, providing a crucial evidence base for policymakers, educators, and industry stakeholders.

In an era defined by rapid technological advancements and increasing global interconnectedness, skills development has emerged as a paramount priority for nations worldwide. According to the World Economic Forum 2025, there are five macrotrends impacting the labour market – technological change, the green transition, geoeconomic fragmentation, economic uncertainty and demographic shifts. These factors will shape and transform the global labour markets and world economies by 2030. The prominence in technologies, particularly AI and information processing (86%); robotics and automation (58%); and energy generation, storage and distribution (41%), are also expected to be transformative. These trends are expected to have a divergent effect on jobs, driving both the fastest-growing and fastest-declining roles, and fueling demand for technology-related skills, including AI and big data, networks and cybersecurity and technological literacy, which are anticipated to be the top three fastest-growing skills. Two demographic shifts are increasingly seen to be transforming global economies and labour markets: aging and declining working age populations, predominantly in higher-income economies, and expanding working age populations, predominantly in lower-income economies. These trends drive an increase in demand for skills in talent management, teaching and mentoring, and motivation and self-awareness. Aging populations drive growth in healthcare jobs such as nursing professionals, while growing working-age populations fuel growth in education-related professions, such as higher education teachers[33].

[32] The World Bank in Skills
[33] https://www.weforum.org/publications/the-future-of-jobs-report-2025/

Namibia is cognisant of these rapid technological advancement and global interconnectedness. In 2022, the Government of the Republic of Namibia appointed the Task Force to determine Namibia's readiness for leveraging the Fourth Industrial Revolution. Their findings are amplified by the WEF 2025 report which are: technologies such as AI, blockchain, machine learning, robotics, big data, VR/AR as blurring the lines between the cyber, physical and biological spheres. The 4IR technologies pose many opportunities but also many challenges to all spheres of society and the economy. This is due to the rapid advantages and changes that AI brings, which are facilitated by large data sets, advances in quantum computing and high-performance computing, the Internet-of-Things (IoT), blockchain, deep learning, machine learning, virtual and augmented reality, 3-D printing and advanced robotics [34].

The study of macro global variables becomes important in understanding its impact on the local demand and supply of skills in Namibia. Another critical factor that is shaping the supply and demand of skills in Namibia is that Namibia has a less complex economy. In a less complex economy, according to the Complexity Outlook Index (COI), the demand for know-how and productive capabilities are less. Countries lacking many capacities will only be able to assemble a relatively modest number of products (little variety), which will also be feasible in many other places (higher ubiquity). Countries that accumulate many capacities will be able to produce a relatively large number of goods (large variety), which on average only a few places will be able to produce (lower ubiquity).[35]

In light of the above mentioned factors, Namibia experiences a skills mismatch between the skills supplied by the labour force and the skills demanded by employers. Despite significant progress in expanding access to education since independence in 1990, a troubling paradox persists: alarmingly high unemployment rates, particularly among the youth (currently 44.4 percent and with overall unemployment hovering at 36.9%), coexist with pervasive reports of skills shortages across key sectors of the Namibian economy. Furthermore, foundational skills, specifically literacy and numeracy, present a significant challenge. Only 32% of Grade 3 learners achieved the minimum required pass rate of 40% in numeracy, with a minimal 5% scoring 75% or higher. Concurrently, in literacy, only 28% of learners met the national minimum pass rate of 40%, and a mere 3% attained a score of 75% or above within the same target demographic.[36]. This disconnect between educational outcomes and the evolving needs of the labour market hinders economic diversification, limits productivity gains, and undermines the nation's ability to compete effectively in the global arena.

[34] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf
[35] Havard growth lab - Namibia economic complexity report 2022
[36] Impact of education on sustainable economic development in emerging markets- the case of Namibia's tertiary education system and its economy, 2020
[36] Roadmap to End Learning Poverty for All in Africa, 2025

This report delves into the multifaceted factors that shape both the supply and demand sides of the skills equation in Namibia. On the supply side, we analyze demographic trends, including population growth, globalization, technology, production structure and economic growth and their impact on the availability of skills across different regions. We examine the performance and responsiveness of the education and training system, encompassing basic education, technical and vocational education and training (TVET), and higher education, in equipping individuals with the skills demanded by the labour market. The report further provides an analysis of how the skills supply impacts MSME. On the demand side, we explore the evolving needs of key industries, employment and occupations.

This Namibia State of Skills Demand and Supply (NSSDS) report is presented as an essential, evidence-based partner to the national development agenda, strategically aligned with the SWAPO Party Manifesto Implementation Plan (SMIP) and the forthcoming National Development Plan 6 (NDP6). These national blueprints articulate an ambitious and necessary vision for mass job creation, industrialization, and economic diversification, targeting key sectors such as Green Hydrogen, Oil & Gas, Agriculture, and mass housing. The NSSDS report provides the critical human capital analysis required to realize that vision. It directly supports the "Youth Empowerment" pillar of the SMIP by first quantifying the scale of the challenge, including a 44.4% youth unemployment rate , and then identifying the precise skills mismatches between the critical technicians, artisans, and engineers demanded by the SMIP's projects and the current output of our national training institutions. Therefore, this report serves as the "supply-side" roadmap, offering the data-driven recommendations necessary to align our human capital development with our national economic goals and ensure that our workforce is ready to build and sustain a prosperous, industrialized Namibia.

This inaugural report draws inspiration from analogous work undertaken by the Rwanda Development Board, a sister organization to the NIPDB, offering a comprehensive analysis of the skills supply and demand dynamics within the country, as well as the World Economic Forum Jobs of the Future Report, which highlights emerging trends in future employment and requisite skills.

Ultimately, this report aims to provide a comprehensive, data-driven, and insightful assessment of Namibia's skills landscape. By identifying the specific skills gaps and surpluses, understanding the underlying causes of the skills mismatch, and analyzing the drivers of skills demand, this report seeks to inform evidence-based policies, targeted interventions, and collaborative initiatives that will bridge the divide between education, training, and the demands of the 21st-century workplace. Only through such concerted efforts can Namibia unlock the full potential of its human capital, foster inclusive economic growth, and build a more prosperous and equitable future for all its citizens.

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METHODOLOGY

3. METHODOLOGY

This report is informed by the conceptual framework which guides the methodology. In terms of this framework, skills supply and demand in Namibia need to be understood within a broader national context. The numerous contextual factors impacting on skills supply and demand vary in importance over time and their impact may operate directly or indirectly. The interaction of supply and demand may give rise to skills imbalances, which may signal the need for policy intervention.

Skills planning aims to align the demand and supply of skills to minimize mismatches and maximize returns on human capital. This process requires a comprehensive understanding of demographic trends, educational attainment, labour market characteristics, and demand-side factors.

During the development of this report, several methodological challenges were encountered, including the need to standardize skill definitions and measurements, establish consistent time frames, and address data availability constraints. To ensure robust analysis, this report benchmarks the state of skills supply and demand in Rwanda of 2022. Data from the National Council for Higher Education (NCHE), Namibia Statistics Agency (NSA), Namibia Training Authority (NTA), Education Management Information System (EMIS), Namibia Integrated Employment Information System (NIEIS), Linked, recruitment trends from recruitment agencies and adverts and various other reports were utilised for the purpose of this report.

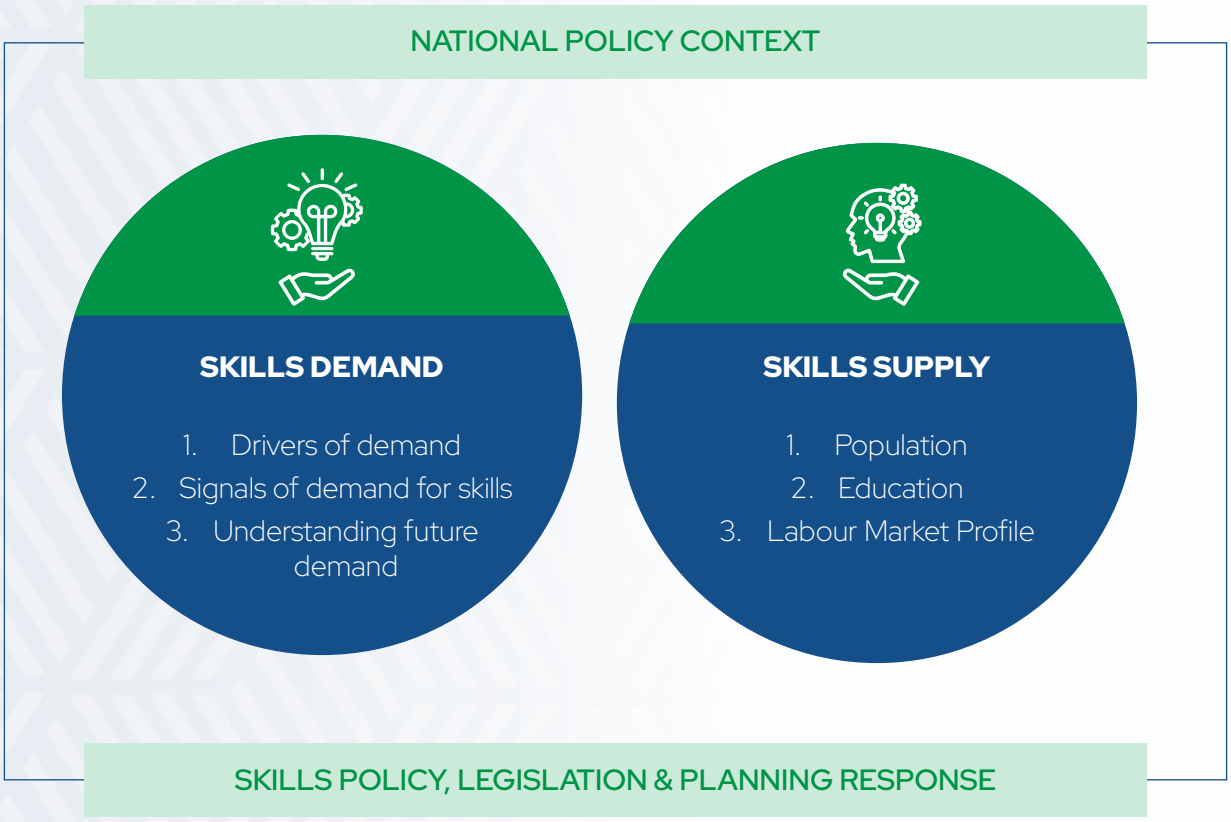
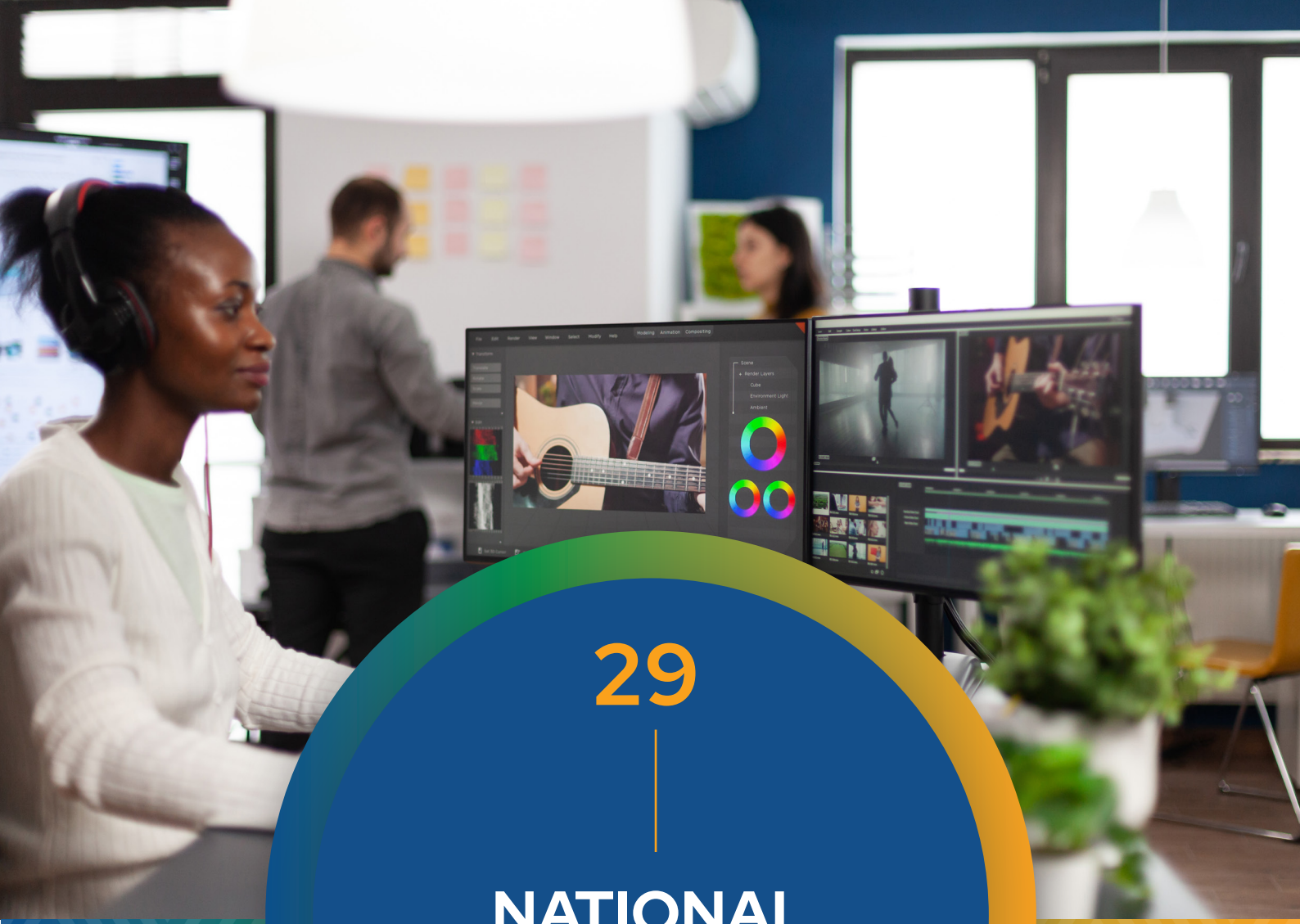


Fig 1: Theoretical Framework



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NATIONAL POLICY CONTEXT

4. NATIONAL POLICY CONTEXT

Namibia's education policies are rooted in the constitution, which guarantees the right to education and mandates government provision. These national policies aim to ensure equitable access, quality education, and inclusive learning environments, as well as address challenges like teacher training, supply of skills and resource allocation. These laws and regulations have an implication on the skills development landscape in Namibia as indicated below:

Table1: National Policy context

National Policies, Strategies and Laws	Skills Development Implications
Vision 2030 is a comprehensive framework to fundamentally transform the Namibian political and economic landscape in areas such as land reform, housing, the environment, health, education and building an economy that provides equal opportunities for all. The vision has been divided into National Development Plans (NDPs)	A fully integrated, unified and flexible education and training system, that prepares Namibian learners to take advantage of a rapidly changing environment and contributes to the economic,moral, cultural and social development of the citizens throughout their lives. Some of the strategic target highlighted is indicated below: • Expand access to secondary schools for the target age group by 2006 • By 2030 Vocational Training Centres are established in all regions • Draw up human resources supply projection for 2001-2030 • Medical Doctors, who are envisaged to increase at the rate of 2.0 percent per year; (b) Engineers, who are also envisaged to increase at 2.0 percent per year; (c) Non-technical secondary personnel, who are expected to decline at, 0.4 percent per year; and (d) Unskilled and semi-skilled primary workers, who are expected to decline at 1.4 percent per year.
National Curriculum for Basic Education	Defines the principles and intended learning for Grades 1-12, ensuring that the curriculum aligns with the constitutional right to education
Sector Policy on Inclusive Education	Promotes the right of all children to quality education, advocating for inclusive practices that address various barriers to learning,
Education Act (Act no. 16 of 2001)	Provides the legal framework for basic education, including free and compulsory education up to Grade 12
Basic Education Act 3 of 2020	Further regulates and promotes free and compulsory basic education, ensuring equitable, inclusive, and quality education for all.
Language Policy for Schools	Addresses the use of languages in schools, promoting both English and mother tongues
Education and Training Sector Improvement Programme (ETSIP)	A strategic plan aimed at improving the quality and effectiveness of the education and training sector
Vocational Education and Training Act 1 of 2008	The Act aims to create a sustainable and effective skills formation system aligned with the needs of the labour market.
National Training Fund	The VET Act provides for the establishment and operation of the National Training Fund to support TVET programs and projects.
Namibia Qualifications Authority Act 29 of 1996	To establish and manage a national framework for qualifications, setting standards for quality education and training throughout the country.
Higher Education Act, 2003 (Act No. 26 of 2003)	This act regulates higher education, establishes the National Council for Higher Education (NCHE), and outlines the process for registering, deregistering, and closing private HEIs.

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MEGA TRENDS THAT IMPACT DEMAND AND SUPPLY OF SKILLS

5. MEGA TRENDS THAT IMPACTS DEMAND AND SUPPLY OF SKILLS

Skills supply refers to the skills the labour force possesses that are available to the employer. This can include individuals currently working (employed) or those willing, able, and available to work (the unemployed). Skills supply must, however, also consider skills within the current labour force, as well as within the future labour force. This includes those individuals who are currently acquiring skills but not in the labour force.

The skills supply of a country is affected by several factors such as aggregate talent, the replacement and mobility ratios and mobility ratios, age and dependency ratios, the workforce gender mix, generational shifts, basic education proficiency. A skill surplus may occur when the supply of skills in the labour force exceeds the demand for those skills, which is generally represented by high unemployment rates among individuals possessing specific skills. While a skill deficit may occur when the demand for skills in the labour force exceeds the supply of those skills, this is where a skills mismatch occurs. When the demand and supply of skills at a specific wage do not match, a skills mismatch can be said to exist. The term skills mismatch has a very broad definition and is used to describe the following situations: vertical mismatch, horizontal mismatch, skill gaps, skill shortages, and skill obsolescence[37]. Each of the former represents a different type of skills mismatch that has become manifest in response to certain conditions. For example, a qualification mismatch occurs when individuals possess skills that are either underqualified or overqualified for the positions they hold. On the other hand, a sectoral mismatch arises when there is an imbalance between the skills demanded by certain industries and those possessed by the workforce. This section is focusing on how mega trends impacts supply and demand of on skills supply.

5.1 Population

The aggregate population numbers provide a contextual underlay to changes in a country's workforce over time. Population plays a fundamental role in skills supply because it determines the availability, diversity, and adaptability of the workforce. A well-balanced population growth, combined with proper education and training, ensures that the labour market remains dynamic and productive. A forecast of a young population implies that the labour force will continue growing. For instance, regions with a youthful demographic can harness a "demographic dividend," where the ratio of working individuals to dependents is favourable, potentially accelerating economic growth and increasing the pool of available skills. Conversely, aging populations can lead to a shrinking workforce, resulting in skill shortages and increased competition for skilled labour as the number of retirees grows relative to working individuals[38].

[37] International Labour Organization: How useful is the concept of skills mismatch, 2017
[38] International Labour Organisation: A population grows, so will need for skills, 2012

Namibia's population has more than doubled over the past 30 years, increasing from 1.4 million in 1991 to over 3 million in 2023, reflecting a steady growth trend. Urbanization has accelerated significantly, with the urban population increasing by 67.4 percent compared to a 24.8 percent rise in the rural population between 2011 and 2023. This trend underscores the growing demand for services such as education, healthcare, and infrastructure, particularly in urban areas.

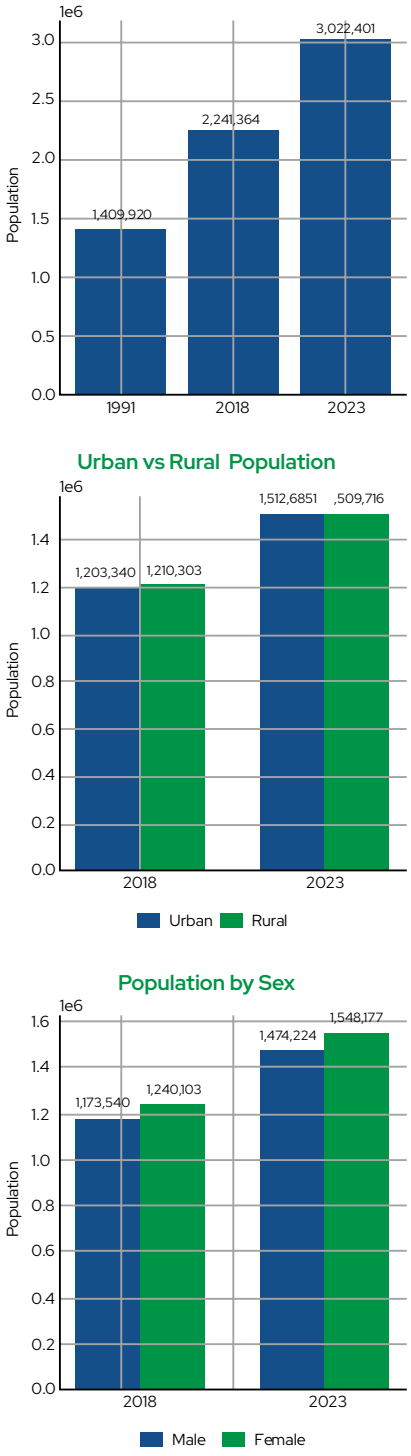


Fig 2: Namibia Population Overview

Source:Namibia PHC Labor Report, 2023

According to the Namibia Statistics Agency Labour force Survey report (2018) and the Population Housing Census Report (2023), Namibia's population more than doubled between 1991 and 2023, growing by approximately 114 percent. This growth accelerated over recent decades, reaching a 43 percent growth between 2011 and 2023. The trend reflects continued expansion driven by higher fertility, improved health, and census completeness. The above figure shows the distribution of total population in rural and urban areas between 2018 and 2023, as well as population by sex within the same period. Although urban and rural populations are nearly equal, both grew from 2018 to 2023, each reaching approximately 1.51 million by 2023. This marks ongoing urbanization but also indicates strong rural population growth. The 2023 census confirms a 50 percent urban-rural split, showing no dramatic shift toward urban dominance yet. The female population consistently outnumbered the male population in both years. In 2023, women represented 51.3 percent of the population. The sex ratio remains balanced, with a slight female majority reflective of broader demographic trends.

Namibia has a median age of 22 years in 2023 compared to a median age of 21 years recorded in 2011, which means that Namibia remains an intermediate population. Demographic analysis reveals that Namibia has a relatively young population, with 37 percent of individuals under the age of 15. Children under 15 are more concentrated in rural areas (41.9%) compared to urban areas (32.1%). Conversely, more youth aged 15–34 years are found in urban areas (38.4%) than in rural areas (29.8%). The working-age population (15–59 years) is dominant in urban areas, making up 63.2% of the population, compared to 49.1% in rural areas. Meanwhile, the elderly population (60 years and older) is larger in rural areas (9%) than in urban areas (4.7%). At the regional level, northern regions such as Kavango West, Ohangwena, Omusati, Kavango East, Oshikoto, and Zambezi had the largest proportions of youth in the age groups of 15 to 24 years. On the other hand, Erongo, //Kharas, Khomas, and Otjozondjupa regions had the highest percent of youth aged 25 to 34 years.

Namibia's youthful population presents both opportunities and challenges for economic development. On one hand, this could lead to a demographic dividend, where a larger proportion of the population is of working age, potentially boosting economic productivity and growth[39]. On the other hand, it poses a challenge to the economy, especially the education sector to ensure that the youth population receive a quality education[40]. The working age demographic forms the backbone of the labour force and contributes to economic productivity when equipped with relevant education, training and experience.

5.2 Globalization

Globalization can have both positive and negative effects on skills demand in the domestic labour market. Although globalization is multi-faceted, in this report, the focus is on economic globalization. Economic globalization refers to the increasing interdependence of world economies as a result of the growing scale of cross-border trade of commodities and services, flow of international capital, and wide and rapid spread of technologies. It reflects the continuing expansion and mutual integration of market frontiers and is an irreversible trend for the economic development of the whole world at the turn of the millennium[41].

The positive impact of economic globalization includes increased trade and investment opportunities. Economic globalization has opened new markets, allowing countries to engage in trade and attract foreign direct investment (FDI). This has led to heightened economic activity and growth across various regions[42]. Globalization has allowed businesses to expand their customer base and access new markets, which has led to businesses expanding their customer bases internationally, boosting sales and profitability, this access helps stimulate local economies and create jobs. Globalization has increased competition among businesses, which has driven innovation and efficiency, leading to increased productivity. Globalization has facilitated the spread of new technologies and knowledge across borders, allowing countries to learn from one another and adopt best practices. Globalization has increased competition among businesses, which has led to lower prices and higher quality products for consumers. Globalization has the potential to drive economic growth and development, particularly for developing countries that have been able to attract foreign investment and benefit from increased trade opportunities[43].

Alternatively, there are also negative impacts of globalization. Firstly, job displacements can occur even as globalization creates jobs in some sectors, it can lead to job losses in others, particularly in manufacturing industries that relocate to countries with lower labour costs. This shift often disproportionately affects workers without higher education or specialized skills. Secondly, income inequality, The benefits of globalization are not evenly distributed; it can exacerbate income inequality both within and between countries. A significant portion of global wealth tends to concentrate among a small elite, leaving many behind[44]. Moreover, cultural homogenization and the spread of global culture can lead to the erosion of local traditions and identities, as dominant cultures overshadow indigenous practices. Lastly, vulnerability to global economic shocks, The interconnectedness of economies means that a downturn in one region can have ripple effects globally. Countries become more susceptible to external economic fluctuations, which can destabilize local economies[45].

[39] World Bank, what do demographic mean for labour supply
[40] Goujon et al., 2020

[41] Gao Shangquan - Economic Globalization: Trends, Risks, and Risk Prevention; 2000.
[42] Research FDI- The effects of globalization on economic development, 2023.
[43] Research FDI- The effects of globalization on economic development, 2023.
[44] Gao Shangquan- Economic globalization: trends, risks and risk prevention; 2000.
[45] Research FDI- The effects of globalization on economic development; 2023.

Economic globalization has significantly influenced the demand for skills in Namibia, shaping the labour market and creating both opportunities and challenges. Globalization has heightened competition within various sectors, compelling Namibian businesses to enhance productivity and efficiency. As companies strive to compete on an international scale, there is a growing demand for skilled workers who can adapt to new technologies and processes. This shift necessitates a workforce proficient in technical skills, digital literacy, and innovative problem-solving. Globalization has also led to the emergence of new industries and job opportunities in Namibia, particularly in sectors like renewable energy and information technology. As global trends shift towards sustainability and digital transformation, there is an increasing demand for skills related to these fields. For example, Namibia's ambitions to become a leader in renewable energy create opportunities for jobs requiring expertise in green technologies.

Economic globalization has profoundly impacted the demand for skills in Namibia by increasing competition, creating new job opportunities, highlighting sector-specific skill gaps, and necessitating reforms in education and training systems. To fully leverage the benefits of globalization while addressing its challenges, Namibia must prioritize skills development initiatives that align with market needs.

5.3 Technological change

The emergence of the Fourth Industrial Revolution (4IR) and its associated technologies such as cloud computing, artificial intelligence, robotics, and the Internet of Things has raised growing concerns about the impact of technological change on the labour market within policy discussions. Generally, the introduction of new technologies disrupts the labour market, leading to growth in certain occupations and industries while others may decline. This disruption can result in immediate skills shortages, as new technologies create a demand for skills that are not readily available in the workforce. Such shortages are likely to continue until the Namibian education system can produce a sufficient number of individuals equipped with the skills that employers require.

It is often argued that an increase in demand for highly-skilled labour is closely correlated with technological progress. For example, rapid progress in information technology creates new demand for computer-related labour. Reports show that about half of the skill premiums in the United Kingdom during the 1980s can be explained by the introduction of computers[46]. There exists a positive relationship between expenditure on computers and the quality indices of labour. While it is generally accepted that technological progress requires new labour skills, there are ongoing discussions regarding what degree increased demand for highly-skilled labour results from technological progress[47].

[46] Jonathan Haskel- small firms, contracting-out computers and wage inequality: evidence from UK manufacturing, 1999

[47] Donald Siegel- The Impact of Computers on Manufacturing Productivity Growth: A Multiple-Indicators, Multiple-Causes Approach; 1997.

The rise of digital technologies underscores the need for enhanced digital literacy across all sectors. The Ministry of ICT has emphasized the importance of nurturing digital skills to empower individuals and encourage participation in the technology sector[48]. Technological advancements are paving the way for new industries, such as the green hydrogen sector driven by Namibia's commitment to green industrialization. The Power-to-X (PtX) economy requires a skilled workforce adept in various fields, including chemical engineering and renewable energy technologies[49] As these industries develop, they create new job opportunities that demand specific skill sets.

Namibia is cognisant of these rapid technological advancement and global interconnectedness. In 2022, the Government of the Republic of Namibia appointed a Task Force to determine Namibia's readiness for leveraging the Fourth Industrial Revolution. Their findings are amplified by the WEF 2025 report which are: technologies such as AI, blockchain, machine learning, robotics, big data, VR/AR as blurring the lines between the cyber, physical and biological spheres[50]. The 4IR technologies pose many opportunities but also many challenges to all spheres of society and the economy. This is due to the rapid advantages and changes that AI brings, which are facilitated by large data sets, advances in quantum computing and high-performance computing, the Internet-of-Things (IoT), blockchain, deep learning, machine learning, virtual and augmented reality, 3-D printing and advanced robotics.[51]

Technological change and Fourth Industrial revolution are major contributors to the reconfiguration of the labour market. Namibia hower has inadequate skills base and legislative framework to support the 4IR, the CRA assessment further indicated critical barriers to the adoption of advanced digital technologies: (a) Lack of capital or funds for investment, (b) Lack of knowledge about possible applications of the 4IR technology, (c) Lack of skills for using the technology, (d) Inadequate power or ICT infrastructure and (e) Difficulty integrating the technology into the organisation's processes. These are key areas in which policy interventions could assist more widespread adoption of 4IR technologies in Namibia[52].

Technological change is reshaping the demand for skills in Namibia by altering existing job roles, creating new opportunities, and highlighting the importance of digital literacy and continuous learning. As industries continue to evolve in response to technological advancements, it is imperative for education systems and businesses to prioritize skills development initiatives that align with these changing demands.

[48] Heskiel Edward- Namibia's technological journey: progress, potential , and challenges ahead; 2023.

[49] PtX Hub International- Bridging skills needs and gaps in Namibia's Power-to-X sector; 2022.

[50] https://www.weforum.org/stories/2025/01/future-of-jobs-report-2025-jobs-of-the-future-and-the-skills-you-need-to-get-them/#:~:text=Five%20jobs%20of%20the%20future&text=These%20jobs%20include%20big%20data,age%20populations%2C%20the%20report%20says.

[51] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

[52] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

5.4 Economic growth path

Economic growth is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. Namibia has a less complex economy. In nominal values, Namibia's exports of goods and services amounted to N$ 98.9 billion in 2023, an increase of N$ 16.0 billion when compared to N$82.9 billion that was recorded in 2022. while imports of goods and services amounted to N$ 150.8 billion in 2023 compared to N$120.8 billion recorded in 2022 [53]. This indicates that Namibia is reliant on imports, with its import value exceeding its export value and this has a direct impact on skills.

The Complexity Outlook Index (COI) assesses a country's potential for economic diversification. It indicates how close a country is to producing more complex products by evaluating the availability of similar productive capabilities and know-how. Essentially, a high COI suggests a country has the potential to diversify its economy by leveraging its existing strengths. In a less complex economy, according to the Complexity Outlook Index (COI), the demand for know-how and productive capabilities are less. Countries lacking many capacities will only be able to assemble a relatively modest number of products (little variety), which will also be feasible in many other places (higher ubiquity). Countries that accumulate many capacities will be able to produce a relatively large number of goods (large variety), which on average only a few places will be able to produce (lower ubiquity). [54] The less complex economy of Namibia has a direct impact on skills, at this stage there might be skills lacking specialisation, know-how and the lack necessary certifications due to the structure of the economy. This is underscored by the fact that 16% of the population is employed in primary industries such as agriculture, forestry, and fishing.

The complexity of an economy can be increased by the State intervention which refers to deliberate actions taken by governments to influence the economy. These actions include altering market incentives, foreign and domestic investments, fostering new industries, and restructuring existing markets. This includes implementing industrial policies, trade regulations, and tax incentives to promote specific sectors or activities. For example, Namibia's focus on renewable energy initiatives, such as green hydrogen projects, aims to reshape its production structure toward sustainable development and decent employment creation. State intervention provides the stability and direction needed for long-term structural change, allowing economies to adapt to global trends and capitalize on emerging opportunities.

5.5 Economic growth

Namibia's economic growth has shown resilience and variability over recent years, influenced by various factors including global market conditions, domestic policies, and sectoral performance. From 2018 to 2024, Namibia's economy experienced periods of growth and slowdown, with a significant impact from the global pandemic and subsequent recovery. While GDP growth showed a slight slowdown in 2024 compared to 2023, it remained positive. The economy is heavily reliant on mining, particularly diamond production, and this sector has been a major driver of growth and export revenues. However, the economy is also susceptible to global economic conditions and commodity price fluctuations. In 2024, Namibia's economy expanded by 3.7 percent, the slow performance was mainly driven by primary industries such as weak demand for diamonds in the international market, which led to lower production as well as the poor performance in the 'fishing and fish processing board' sector that declined [55].

Economic growth in Namibia has a significant impact on the demand for skills, shaping the labour market and influencing workforce development. As Namibia's economy grows, particularly in sectors such as mining and renewable energy, there is a heightened demand for specialized skills. The mining sector, which has been a key driver of economic growth, requires workers with technical expertise in areas like geology, engineering, and environmental science. This demand for specialized skills is further compounded by the need for high-skilled foreign workers, as evidenced by their wage premiums in the labour market[56].

Economic growth can foster an environment conducive to innovation and entrepreneurship. As individuals acquire new skills through education and training, they become more capable of starting their own businesses or contributing innovative ideas within existing organizations. This entrepreneurial spirit not only creates jobs but also stimulates further economic growth[57].

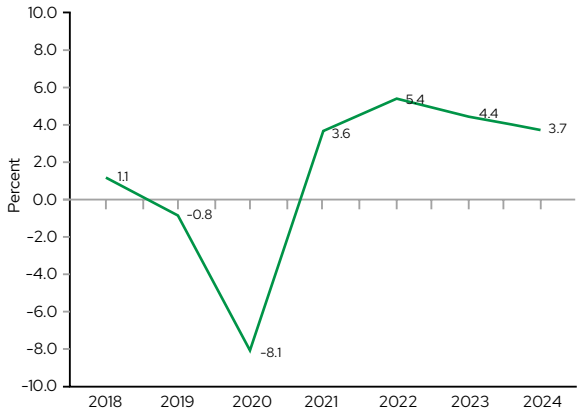


Fig 3: Namibia GDP growth rate in Percent

Source: Namibia Statistics Agency- Annual National Accounts 2024.

[53] Namibia Statistics Agency: Annual National Accounts, 2023.
[54] Havard growth lab - Namibia economic complexity report 2022
[55] Namibia Statistics Agency- Annual National Accounts 2024.
[56] Ricardo Hausmann- A growth diagnostic of Namibia; 2022.
[57] Tjivingurura Mbuende- Unlocking Namibia's Economic Growth & Opportunities in 2023; 2023.

According to the NSA Annual National Accounts, the Namibian domestic economy grew by 3.7 percent in 2024, a slower growth relative to 44 percent recorded in 2023 (figure 3). The slow performance was mainly driven by the primary industries that recorded a decline of 1.8 percent compared to a growth of 10.0 percent registered in 2023. However, secondary and tertiary industries grew by 3.0 percent and 4.9 percent in 2024 compared to growth rates of 2.4 percent and 3.0 percent recorded in 2023 [58].

5.6 Productivity

A country's production structure is the basic source of its economic performance. It determines the rate of firm-level innovation, diversification of the economy, length of job ladders, and direction of structural change. The production structure not only reflects current economic strengths but also shapes the pathways for future growth and development. There are many sources of structural transformation, but they can be grouped into two broad categories: (1) state intervention and (2) external shocks [59].

The production structure of an economy significantly affects the demand for skills, influencing how resources are allocated and what competencies are prioritized in the labour market. The production structure defines the dominant sectors within an economy, which directly impacts the types of skills that are in demand. For example, economies that are heavily reliant on agriculture may prioritize skills related to farming techniques and agronomy, while those with a strong industrial base may require engineering and technical skills [60] .

The production structure also influences remuneration across sectors. High wages in certain sectors, such as manufacturing or mining, reflect the cost of labour relative to productivity. Firms operating in sectors where wages significantly exceed the cost-benefit threshold may seek cost reductions by outsourcing or off-shoring these activities to countries with lower labour costs. When firms decide to offshore manufacturing or other high-wage activities, the local demand for specific skills tied to these activities decreases. For example, if Namibia outsources manufacturing due to high domestic wages, local demand for manufacturing skills (e.g., welding, assembly-line operation) may decline.

Namibia's current production structure is characterized by a diverse mix of primary, secondary, and tertiary industries, with a strong emphasis on mining and agriculture. The mining sector, driven by the extraction of diamonds, uranium, and other minerals, remains the backbone of the economy, contributing significantly to GDP, export earnings, and government revenue. Agriculture, particularly livestock farming and crop production, plays a crucial role in rural livelihoods and food security, though it faces challenges from climate variability and limited arable land.

5.7 Green Transition

Green transition climate change adaptation is expected to be the third-largest contributor to net growth in global jobs by 2030, projected to contribute an additional 5 million net jobs, while climate-change mitigation comes in 6th with an additional 3 million net jobs. Trends in energy generation, storage and distribution, meanwhile, are expected to create an additional 1 million net jobs – the second-largest technology-based contribution to net job growth (after trends in AI and information processing technology). Expectations around climate-change adaptation and mitigation trends are pushing Environmental Engineers and Renewable Energy Engineers into the top 15 fastest-growing jobs, as well as driving growth in roles such as Sustainability Specialists and Renewable Energy Technicians. This is corroborated by evidence that "green hiring" has consistently outperformed overall labour-market hiring trends in recent years. Both green transition-related macrotrends are also expected to drive some of the largest labour-market transformation, in absolute terms, in the global economy. This includes being the largest drivers of both job growth and decline in farmworkers, labourers, and other agricultural workers as well as being among the strongest drivers of net job growth for Building Framers, Finishers and Related Trades Workers [61].

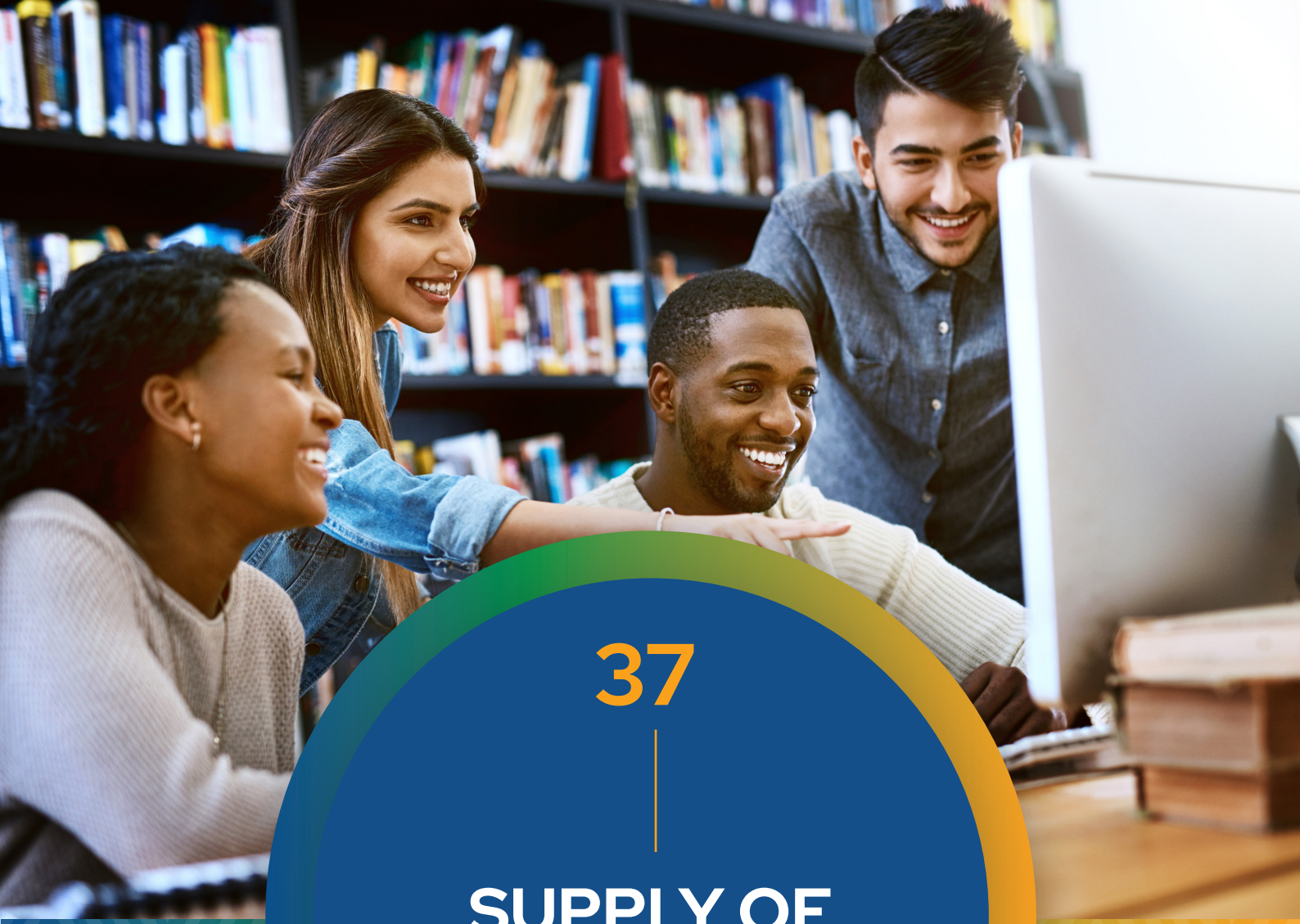
Recommendations

1. Conduct a comprehensive policy and legislative review for 4IR (legislative review toolkit for use in review and formulation of assessing outdated, obsolete laws and gaps) to enable rapid technological advancement, global interconnectedness and to aid the reconfiguration of the labour market.[62]

2. Accelerate 4IR Infrastructure developments (build on ongoing efforts, expand ICT network coverage and access, and operationalise a Special Purpose Vehicle entity to deliver ICT infrastructure and services.[63]

[58] Namibia Statistics Agency- Annual National Accounts 2024.
[59] Collin Constantine- Economic Structures, Institutions and Economic Performance; 2017.
[60] World Bank- Forecasting labour and skill demand by sector and occupation; 2015.

[61] https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf
[62] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf
[63] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf



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SUPPLY OF SKILLS

6. SUPPLY OF SKILLS

Education (Future Talent High School efficiency)

Nagpal infers that the strongest predictor of the long-term prospects for an economy is the quality of its formative education system[64]. Education plays a fundamental role in shaping the supply of skills globally and Namibia is not an exception. As the primary means of developing human capital, the education system is pivotal in equipping individuals with the knowledge, abilities, and qualifications required to contribute meaningfully to the economy. The supply of skilled labour in Namibia is directly influenced by access to education, quality of education, and the alignment of educational programs with labour market demands

The quality of formative education on the other hand is a very powerful enabler for it unlocks potential. For example countries with a stronger educational performance tend to have smarter workers and a strong learning ethic, which is critical in a fast-paced world. They are also able to grow and leverage technology better. In fact the potential pipeline of scientists, mathematicians and researchers can be clearly seen through the mathematics and science scores of pre-university students. For example the OECD developed the first Programme for International Student Assessment (PISA) to administer and measure literacy standards across member states to test 15 year olds on three dimensions: reading, mathematics and science. Eighty-one countries and economies took part in the 2022 assessment, which focused on mathematics, and the data were released by the OECD on 5 December 2023. Countries that are leading currently Canada*, Denmark*, Finland, Hong Kong (China)*, Ireland*, Japan, Korea, Latvia*, Macao (China) and the United Kingdom*. The quality of curriculum, quality of teaching, student- teacher relations, has an impact on the educational proficiency among future generations.

There are several reasons why business leaders should be interested in the academic performance of 15 year olds across the world: the better the quality of educational competency in secondary schools the richer the pipeline of talent entering the workforce a few short years later. Better quality education eventually translates into more managers, professionals, scientists, engineers and entrepreneurs. This correlates very well with GDP performance too, as a high-quality talent pool is a critical ingredient for both new business to take root and older business to flourish and grow. Across the world, UN and educational policy makers closely track changes to a country's gross enrolment ratio (GER). The GER is a statistical index that demonstrates the percentage of students actually enrolled in the school system, compared to the overall population eligible for education. In Namibia, the gross enrollment ratio for primary education is over 100%, but decreases to 96% in lower secondary education. The gross enrollment ratio in HEIs is at 19%, which is higher than the average for sub-Saharan Africa. In 2019, the gross enrollment ratio in higher education was 27.1%. In post-secondary non-tertiary education, the gross enrollment ratio was 32.53% in 2018 [65].

The GER is supported by Goal 4 of the Harambee Prosperity Plan (HPP)- Improved Access to Quality Education and Sports. It emphasizes the importance of enhancing education systems and opportunities to ensure Namibians can realize their full potential. This includes, increasing the pass rates for Grade 10 and 12 learners, enhancing vocational education training (VET) to develop a reputable competitive system, as well as expanding VET opportunities and improving the scope and quality of training programs . The section below will focus on the GER Statistical Index with a specific focus on the high school, HEIs and its implication on the labour market.

6.1 Basic Education

Namibia has embraced free primary and secondary education for all, with net enrolment of over 90 percent for 7 to 18-year-olds age group. The country allocates more than 20 per cent of the national budget to education, however equitable access to education remains a challenge especially among the minority groups, children with disability and the most vulnerable children [67]. Despite an enabling legislative framework, barriers such as inaccessible infrastructure, negative cultural practices, inadequate teaching resources, and limited institutional capacity hinder the full inclusion of marginalized groups. For example, children from indigenous communities like the San and Ovahimba face high dropout rates due to systemic exclusion and a lack of culturally responsive teaching methods. Similarly, children with disabilities often encounter stigmatisation, discrimination, and insufficient access to appropriate learning technologies. Consequently, these barriers impede the advancement of individuals to higher education and vocational training, significantly reducing the availability of skilled labor.

Namibia's education system faces systemic challenges that directly impact the quality of education and skill development. While regions like Omusati, Ohangwena, and Oshana have high school enrollment rates, severe teacher shortages in these areas lead to overcrowded classrooms and reduced personalized learning, undermining foundational skills like literacy and numeracy. Conversely, regions with fewer schools (e.g., Kunene, Omaheke) struggle with limited access to education infrastructure, exacerbating disparities in educational outcomes [68]. The uneven distribution of teachers and learners across regions—particularly the concentration of skilled educators in urban centers like Khomas—widens the urban-rural divide, stifling skill development in rural areas and driving migration to cities.

[64] Nagpal G. (2013). Talent Economics: The Fine Line Between Winning and Losing the Global War for Talent (1st ed).
[65] https://www.unicef.org/esa/media/13006/file/Namibia-Education-Budget-Brief-2023-24.pdf
[66] Harambee Prosperity Plan 2.
[67] UNICEF, 2015
[68] Ministry of Education, Arts and Culture Emis Report, 2022.

These inequities threaten long-term economic growth by limiting the availability of skilled professionals in critical sectors and perpetuating regional disparities in human capital. The quality of Namibia's education system significantly impacts the supply of skilled professionals, as evidenced by the diminished performance rate among learners who sat for NSSCO and NSSCAS exams in 2023 [69]. This poor performance severely limits the number of students qualifying for tertiary education or vocational training, thereby reducing the pool of skilled labour available to meet the country's economic demands.

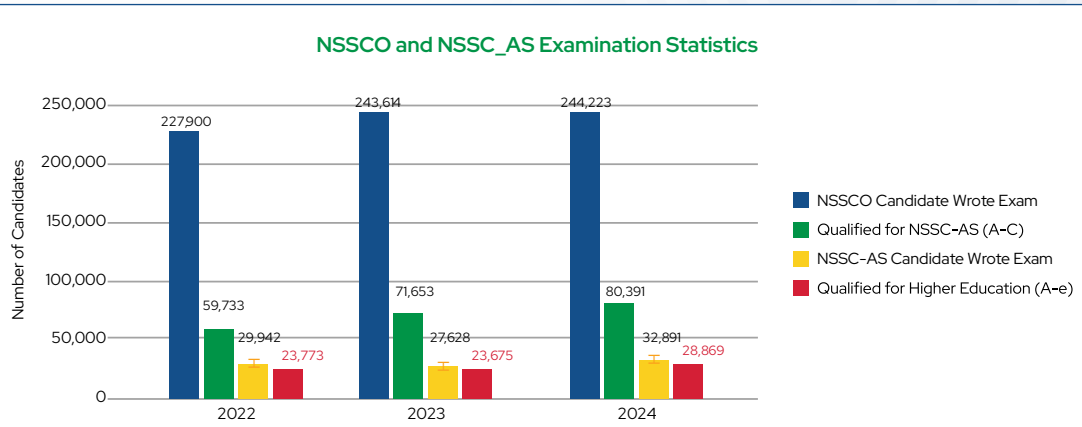


Fig 4: NSSCO and NSSC-AS Examination Statistics

Source: Ministry of Education, Arts and Culture, EMIS Report 2022,2023,2024

The overall number of learners writing the NSSCO examinations has steadily increased, rising from 227,900 in 2022 to 244,223 in 2024. This reflects a gradual expansion of access to secondary education, with more learners completing this stage each year.

Encouragingly, the number of learners qualifying for the Advanced Subsidiary (NSSC-AS) level has also grown significantly. In 2022, 59,733 learners qualified for NSSC-AS, compared to 71,653 in 2023 and 80,391 in 2024. This consistent upward trend suggests an improvement in the quality of passes at the NSSCO level, with more learners achieving the required A–C grades.

When it comes to enrolment at NSSC-AS, the numbers declined slightly from 29,942 in 2022 to 27,628 in 2023 before rebounding strongly to 32,891 in 2024. Despite this rebound, the proportion remains low: in 2024, only about 13% of NSSCO candidates qualified to sit for NSSC-AS examination. This highlights a major bottleneck in the education system, where large numbers of learners complete NSSCO, but relatively few progress to senior education

However, access to higher education remains limited. The number of learners meeting the A–E remained relatively stagnant in 2022 and 2023 at around 23,700 but showed a notable increase in 2024 to 28,869 candidates. This growth of over 22% indicates that more learners are not only qualifying for but also taking up the opportunity to pursue advanced studies, which could strengthen the pipeline of students prepared for higher education.

In summary, Namibia's examination statistics reflect positive progress in both participation and performance at the NSSCO level, as well as an encouraging rise in NSSC-AS enrolment. The improvement seen in 2024 could point to the impact of policy measures or better teaching support. Yet, the persistent challenge remains the relatively low share of learners qualifying for higher education, signaling the need for continued interventions to bridge this gap and expand opportunities beyond secondary school.

Educational statistics for Namibia in comparison with other countries indicate the critical importance of investing in education if Namibia seeks to reap the benefits of 4IR. Although Namibia does not score lowest in the region for investment and enrolment into tertiary education, it does score lowest for ICT graduates, which are essential for 4IR. This is corroborated by the findings that the quality of mathematics and science education are below average. Availability of scientists, technologists and engineers as well as availability of advanced digital skills are lowest among the African countries assessed. Moreover, 4IR technologies are also changing the way education and teaching are imparted. The assessment further shows that the Namibian style of teaching needs to change and that the quality of vocational training is considered below average. Therefore, an education reform across all layers is necessary to provide for the future of work and the 4IR, from basic education to tertiary education and lifelong learning. There are inadequate opportunities for upskilling and reskilling of unemployed youth.

[69] The Namibian Sun, The EDD and flow of Namibia's education sector, 2024.

In summary, Namibia's examination statistics reflect positive progress in both participation and performance at the NSSCO level, as well as an encouraging rise in NSSC-AS enrolment. The improvement seen in 2024 could point to the impact of policy measures or better teaching support. Yet, the persistent challenge remains the relatively low share of learners qualifying for higher education, signaling the need for continued interventions to bridge this gap and expand opportunities beyond secondary school.

Recommendations

1. Incentivise learners to study STEM subjects through grants and scholarships to ensure a sufficient supply of enrollments to TVET and HEIs in the STEM fields. The NIPDB has developed a STEM blueprint which would be instrumental in supporting the efforts of the Ministry in this regard.

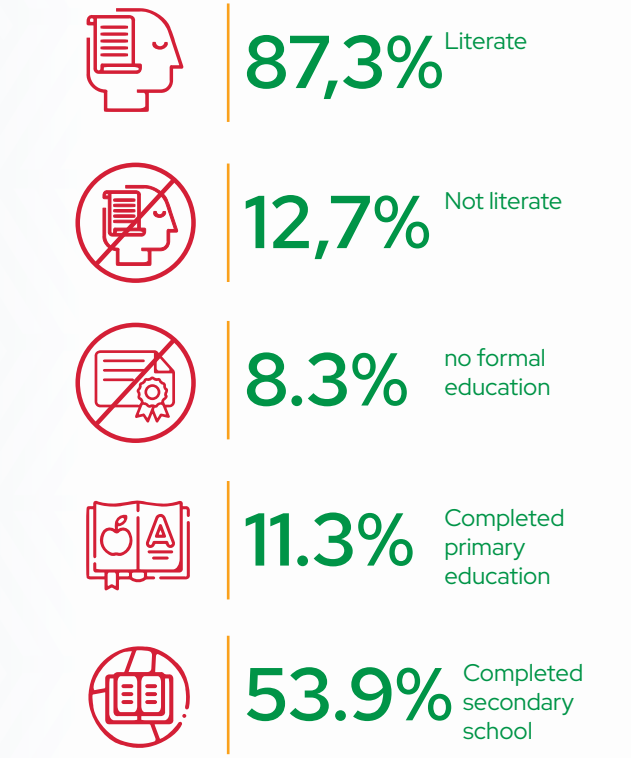
2. Increase teachers ratio to learner to avoid overcrowded classrooms and reduced personalized learning that will enable foundational skills like literacy, digital literacy and numeracy.

3. Namibia to embark upon education reform across all layers is necessary to provide for the future of work and the 4IR, from basic education to tertiary education and lifelong learning.

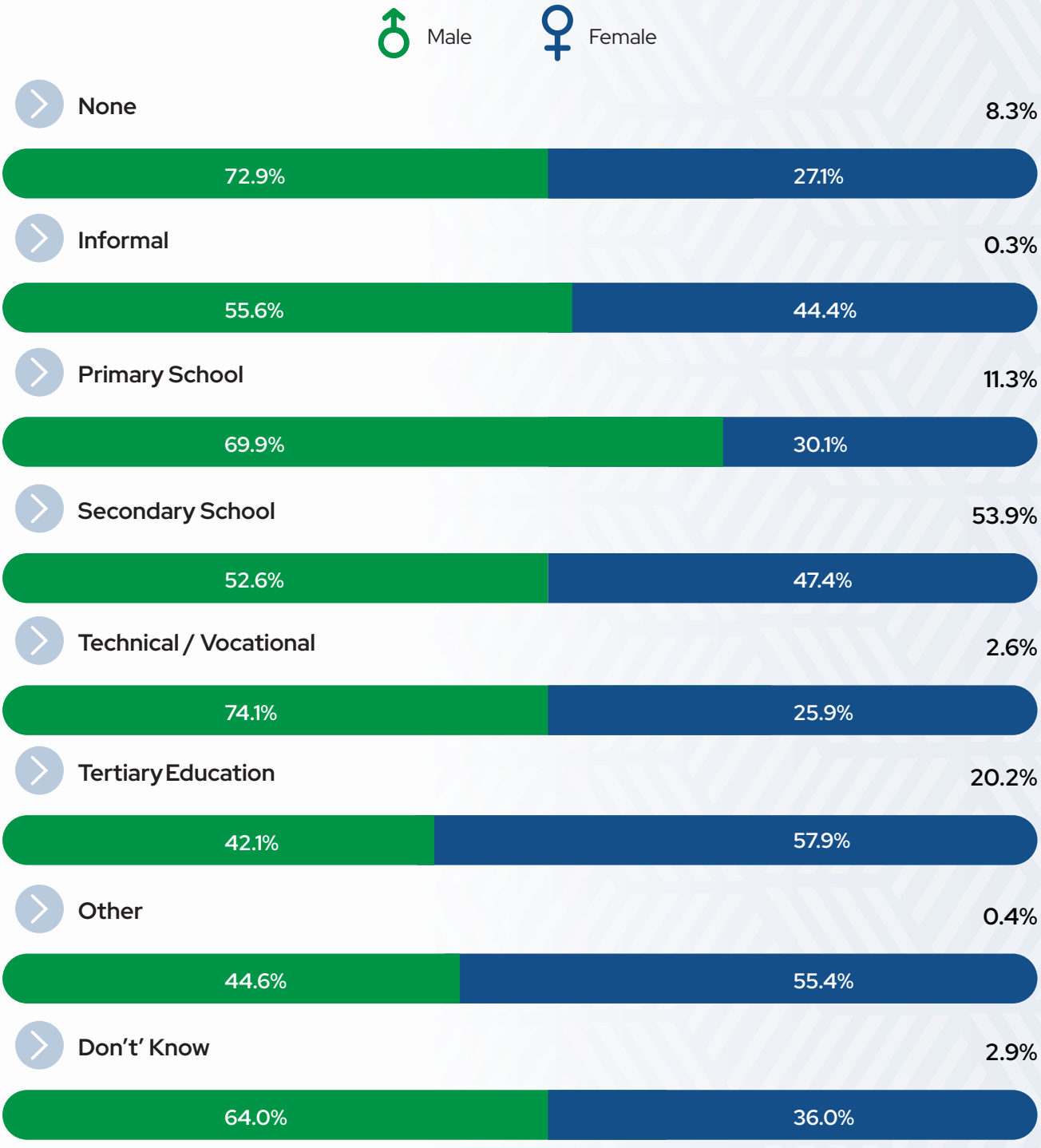
6.1.1 Basic education and supply of skills in the labour market

The school enrollment and completion in basic education informs the talent pool supply in the labour market especially when it comes to semi-skills levels. The 2023 Namibia Population and Housing Census statistics indicate that secondary education serves as a minimum threshold for employability in many sectors. Primary education still supports employment, particularly among men (69.9%) who are more likely to engage in low-skill or informal sectors than women (30.1%). The Labour Force statistics compliments the enrollment data findings and access to education from the 2023 PHC as indicated below for the employed population;

- About eighty seven percent (87.3%) of the adult population (15+) is literate, and about twelve percent (12.7 %) of the population is not literate.
- 8.3 percent have no formal education
- 11.3 percent have completed primary education
- 53.9 percent have completed Secondary school



Educational Attainment of the Employed by Gender



Total Respondents: 546,805. Gender percentages represent the proportion within each category

Fig 5: Employed Population by Highest Level of Education and Sex

Source: Namibia Population and Housing Census, 2023

6.2 Technical Vocational Education and Training

Technical and Vocational Education and Training (TVET) refers to education and training programs designed to equip individuals with practical skills, knowledge, and competencies required for specific trades, occupations, or industries. It focuses on preparing learners for employment, entrepreneurship, or further education in technical fields and plays a vital role in driving economic growth and addressing unemployment[70]. As of 6 March 2025, Namibia had a total of 73 registered Technical and Vocational Training Centres, which together play a significant role in providing vocational education and training across the country[71]. It further aims at equipping learners with practical skills for employment or entrepreneurship. By aligning training with labour market needs, TVET enhances graduate employability, supports industrialization, and addresses youth unemployment, serving as a key driver of productivity and economic transformation in Namibia[72].

Table 2: Registered TVET Institutions in Namibia as at March 2025

Institutions	Public/ Private	Numbers
Vocational Training Centres	Public	7
Vocational Training Centres	Private regulated under NTA	62
Namwater's Human Resources Development Centre	Public	1
Namibian Maritime and Fisheries Institute	Public	1
National Youth Service	Public	1
Namibia Defence Force Training Establishment VTC	Public	1

Source: Namibia Training Authority

Table 3 depicts TVET qualifications, offered by Vocational Training Education in Namibia. The Namibia Training Authority (NTA) develops a wide range of qualifications across various sectors, including agriculture and forestry, transport, warehousing and logistics, financial and business services, fisheries and maritime, wholesale and retail, healthcare and social services, tourism and hospitality, postal and telecommunications, manufacturing, automotive sales, arts and crafts, mining and quarrying, construction, electricity, gas, water supply, and sanitation.

Table 3: TVET in Namibia: Qualification Levels

NQF Levels	TVET Qualification Categories
1-5	Unit Standards
1-5	Certificates
5-6	Diplomas

Source: Namibia Qualifications Authority [73]

To be admitted into Technical and Vocational Education and Training (TVET) courses in Namibia, learners who wrote the NSSCO exams need 20 points in six subjects, including at least an F symbol in English and Mathematics, with Physical Science being compulsory for technical trades. Additionally, JSC Grade 10 students may be considered if they achieve 23 points in six subjects, with at least an E symbol in English, Mathematics, and Physical Science[73]. TVET qualifications are aligned with the National Qualifications Framework (NQF), which consists of 10 levels reflecting increasing complexity in knowledge and skill application. TVET programs typically offer qualifications ranging from Level 1 (basic skills) to Level 6 (advanced technical skills), with NQF Levels 1-3 corresponding to certificates and NQF Levels 4-6 corresponding to diplomas[75].

[70] African Union, Skills Initiative for Africa, TVET country profile.
[71] https://trainingproviders.nta.com.na/downloads/
[72] African Union, Skills Initiative for Africa, TVET country profile.
[73] National TVET Policy, 2021
[74] RVTC, minimum admission criteria for the TVET sector.
[75] Namibia Training Authority National Technical and Vocational Education and Training (TVET) Policyy.

Fig 6: TVET Enrollment and Graduate

The TVET enrollment and graduate data from 2020 to 2024 reveals important insights into Namibia's skills development pipeline. While enrollment peaked in 2020 at 34,920, it sharply declined to 16,740 in 2021, before stabilising around 23,000 in the subsequent years. This suggests a partial recovery in enrollment post-2020, possibly influenced by external shocks such as the COVID-19 pandemic. However, graduation rates do not align directly with enrollment figures, as graduates in a given year typically originate from cohorts enrolled across multiple previous years and levels.

Notably, graduation numbers remain significantly lower than enrollment across all years, highlighting challenges in throughput and retention. For instance, despite over 23,000 enrollments in 2022, only 4,555 individuals graduated. A similar pattern occurred in 2020 and 2023, with 4,833 and 7,730 graduates respectively, despite much higher enrollment numbers. The year 2021 saw the highest number of graduates (9,134), likely reflecting successful completions from cohorts that enrolled prior to 2020. This points to a broader systemic issue: while TVET access may be improving, the sector continues to struggle with efficiency in converting enrollments into qualified, job-ready graduates.

Graduates are typically trained for employment or entrepreneurship in vital sectors, such as manufacturing and engineering, construction, tourism and hospitality, information technology, agriculture and agribusiness, healthcare support services and energy and renewable resources.

Table 4 presents the trades, qualifications, and occupations completed by TVET graduates across their respective sectors. The data from the TVET graduate survey indicates that out of the 10,879 sampled graduates, 4,423 successfully completed trades in key sectors, resulting in a completion rate of 40.7%. This outcome demonstrates a strong alignment between TVET outputs and Namibia's current occupational distribution, as reflected in the 2023 Labour Force Survey. The TVET is predominantly supplying skills in the Manufacturing, Construction, Administration, and Tourism Sectors.

Table 4: Completion Status by TVET Trades, 2023

Trade Completed	% comple-tion	Related Industry Sector
Office Administration	19.3	Administrative and support service activities
Mechanical & Automotive Engineering	9.5	Manufacturing
Plumbing & Pipe Fitters	9.0	Construction
Electrical & Electronic Engineering	8.1	Energy
Hospitality & Tourism	6.8	Tourism
Welding & Metal Fabrication	6.4	Manufacturing, Mining and Quarrying
Business Management	6.0	Business Management

Trade Completed	% comple-tion	Related Industry Sector
Joinery & Cabinet Making	4.5	Construction
Accounting, Economics and Finance	4.3	Finance and Insurance Activities
Bricklaying & Plastering	3.5	Construction
Human Resource Management	2.6	Public Administration
Education	2.0	Education
Clothing Production	1.8	Textile Industry/Sector
Counselling	1.5	Human health and social work activities
Wholesale& Retail	1.5	Retail
Airconditioning and Refrigeration	1.3	Manufacturing, Construction
Fitter and Turner	1.2	Manufacturing, Mining and Quarrying
Marketing Management	1.1	Marketing
Occupational Health and Safety	1.0	Health and Safety
Boilermaking	0.9	Manufacturing, Mining and Quarrying
Total	92.3	

Source: TVET Graduates Survey Report, 2023.

The table from the TVET Graduates Survey Report of 2023, presents the distribution of trade completions across various fields. The graduate survey focused on TVET graduates, who graduated between 2018-2020, the survey highlights areas of vocational training most pursued. Office Administration leads significantly with 19.3 percent of the total number of respondents (925 completions), indicating a high demand or accessibility. This is followed by Mechanical & Automotive Engineering (9.5%), Plumbing & Pipe Fitters (9.0%), and Electrical & Electronic Engineering (8.1%), all representing critical technical fields aligned with industrial needs.

Trades like Boilermaking, Occupational Health and Safety, and Marketing Management show lower completion rates (under 1.5%), suggesting either limited program availability, low demand, or potential gaps in awareness or funding. The information further depicts that only 92.3% of total completions are accounted and that the supply of skills are still in the traditional occupations.

6.2.1 TVET skills supply by occupations

Table 4 depicts TVET supplied skills into the labour market over a 3 year period (2018-2020) in the respective trades at NQF level 3 and 4. The TVET skills that are supplied in the market are Mechanical & Automotive Engineering (9.5%), Plumbing & Pipe Fitters (9.0%), and Electrical & Electronic Engineering (8.1%), which may contribute the supply of skills for technicians and association professionals at 50,393 and plant machine operators, assemblers 23, 565 according to the 2018 Labour Force Survey and the 2023 PHC Report. However, a notable proportion of graduates without relevant placement in their fields of study may still land in elementary occupations, due to lack of absorption into aligned fields, indicating a potential skills mismatch or underemployment issue. Office Administration can be classified under services and sales workers and elementary occupations. Occupations that are not listed but supplied are Occupational Health and Safety and Clothing Production. Table 5 indicates that between 2018 and 2023, there is an increase in employment for technicians and associate professionals. However during the same period, there is a decrease in plant and machine operators and elementary occupations, presumably due to the economic downturn, which further contributes to TVET graduate unemployment.

Table 5: Employed Persons by Occupation

Occupation	2018	2023	%
Manager	11,825	47,174	8.6
Professionals	53,032	68,541	12.5
Technicians and associate professionals	38,002	50,393	9.2
Clerical support workers	39,130	28,482	-5.2
Service and sales workers	105,774	73,294	-13.4
Skilled agriculture, forestry and fishery	110,664	53,934	-9.9
Craft and related trade workers	90,432	63,812	-11.7
Plant and machine operators, and assemblers	33,544	23,565	-4.3
Elementary occupations	211,246	118,947	-21.8
Armed forces occupation	9,475	18,642	3.4
Not elsewhere classified	22,617	20	0.0
Total	725,741	546,805	100

Namibia Labour Force Survey, 2018 and Population & Housing Census, 2023

From the data provided, it is clear that TVET occupations have not fully evolved into offerings which are driven by AI and technological advancement. According to employer expectations for the evolution of skills in the next five years, technological skills are projected to grow in importance more rapidly than any other type of skills. Among these, AI and Big Data top the list as the fastest-growing skills, followed closely by Networking, Cybersecurity and Technology literacy. Complementing these technical skills, creative thinking and two socio-emotional attitudes – resilience, flexibility, and agility, along with curiosity and lifelong learning – are also seen as rising in importance[76]. One of the declining professions globally according to WEF is Administrative Assistants and Executive Secretaries. According to Table 4, Office Administration has the highest graduation percentage. If the trend continues, this specific trade will be oversupplied and become redundant in years to come.

When comparing the occupations listed in Table 4 above to the World Economic Forum (WEF) Future Of Jobs Report 2025, it becomes evident that Namibia's economy remains underdeveloped in emerging sectors such as Digital Technology, E-commerce, Digital Marketing and Cybersecurity. Additionally , there is limited employment in sectors such as energy, water supply and sewerage, real estate as well as arts, entertainment and recreation. This sectoral gap underscores the need for TVET curricula to evolve in line with global labour market trends, ensuring that graduates are equipped with both current and future workforce demands.

[76] https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

Recommendations

1. TVET to align curriculums, courses to current and emerging sectors, provide short courses and certifications that are responsive to the local and global labour market demands.

2. TVET to broaden digital access to transform their courses that will enable TVET graduates to participate in the emerging economic sector opportunities. These opportunities in AI and Information Processing Technologies, Robots and Autonomous Systems, Energy Generation, Storage and Distribution, New Materials and Composites, Semiconductors and Computing Technologies Sensing, Laser and Optical Technologies are expected to transform 58% of employers' businesses, while Energy Generation and Storage Technologies are expected to transform 41% of businesses. These skills areas are over and above those listed in NTA's SKills Development Plan II . [77]

6.3 Higher Education

Namibia's Higher Education system includes public institutions like the University of Namibia (UNAM), Namibia College of Open Learning (NAMCOL) and Namibia University of Science and Technology (NUST), as well as private institutions like the International University of Management (IUM), Institute for Open Learning (IOL) and Welwitchia Health Training Centre. Admission typically requires 25-27 points from Grade 12 exams, with English proficiency being mandatory. According to reports by the National Council for Higher Education (NCHE), higher education aligns with Vision 2030 to support sustainable economic development, though challenges such as unequal access, infrastructure gaps, and funding constraints persist.

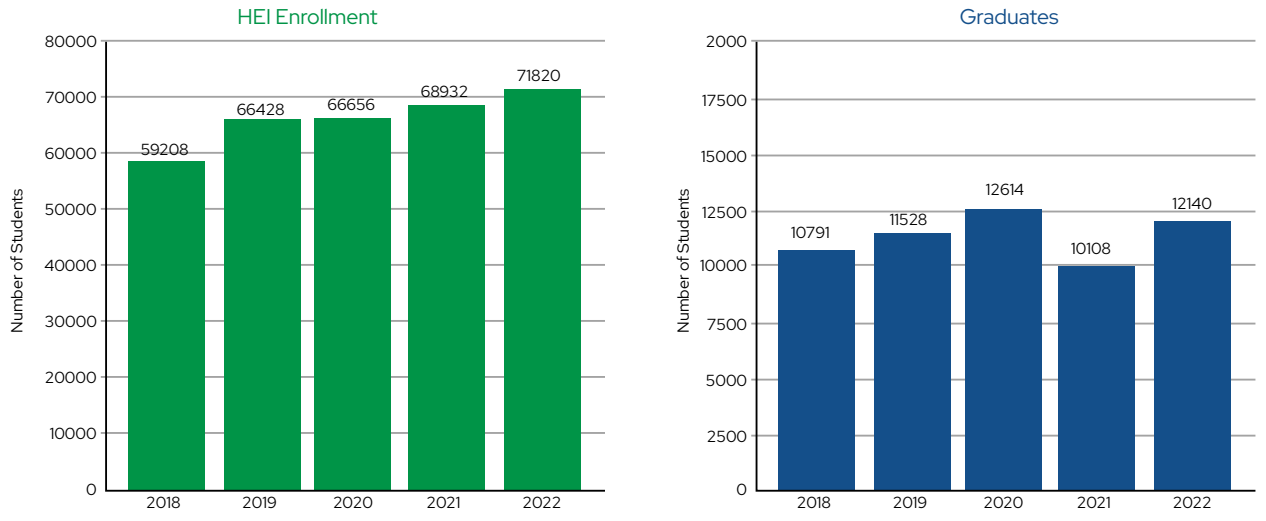


Fig 7: Higher Education Institution Enrollment and Graduates | Source: Namibia Higher Education Statistical Yearbook, 2022

Basic education, specifically, upper secondary education (NSSCO and NSSC-AS levels) acts as a foundational pipeline for HEIs, as performance at the secondary school level directly impacts higher education enrollment. Namibia has experienced a significant increase in higher education enrolments, rising from an average gross enrolment of 59,208 in 2018 to 71,820 in 2022, as reported in the 2022 National Council for Higher Education Higher Education Statistical Yearbook. The statistics in the NSSCO and NSSC-AS examination (Fig. 4) shows that in 2022, 23,773 candidates qualified for higher education. Although over 23,000 new candidates qualified, HEI enrollments are much higher, indicating that HEIs accept students from previous years, and not all HEI entrants are recent NSSC-AS graduates; some may be mature entry, older students, students from bridging programs or international students.

[77] www.nta.com.na/download/skills-development-plan-ii-2022-2026/

Upon comparing the two charts, a deeper narrative of the relationship between student enrolment and graduation emerges. Naturally, there is a substantial gap between the number of students enrolled and those who graduate each year, which is expected given that degree programs typically span multiple years. Consequently, the number of graduates in a given year is largely influenced by the enrolment figures from several preceding years. Following this logic, the consistently increasing enrolment from 2018 onwards should have led to a steady rise in graduates in the subsequent years.

However, this expected trend is only partially visible and is significantly disrupted by an anomaly in 2021. In that year, while enrollment continued to climb, the number of graduates experienced a sharp and considerable drop. This critical point of analysis suggests the influence of external factors, such as the potential impacts of the COVID-19 pandemic, which may have delayed graduations or led students to extend their studies.

The subsequent strong rebound in the number of graduates in 2022 supports this interpretation. This recovery suggests that the dip in 2021 was likely a temporary delay rather than a permanent loss, with many students who might have otherwise finished in 2021 completing their studies the following year. Indeed, the 2022 graduate figure is the second-highest in the observed period, surpassed only by the peak in 2020.

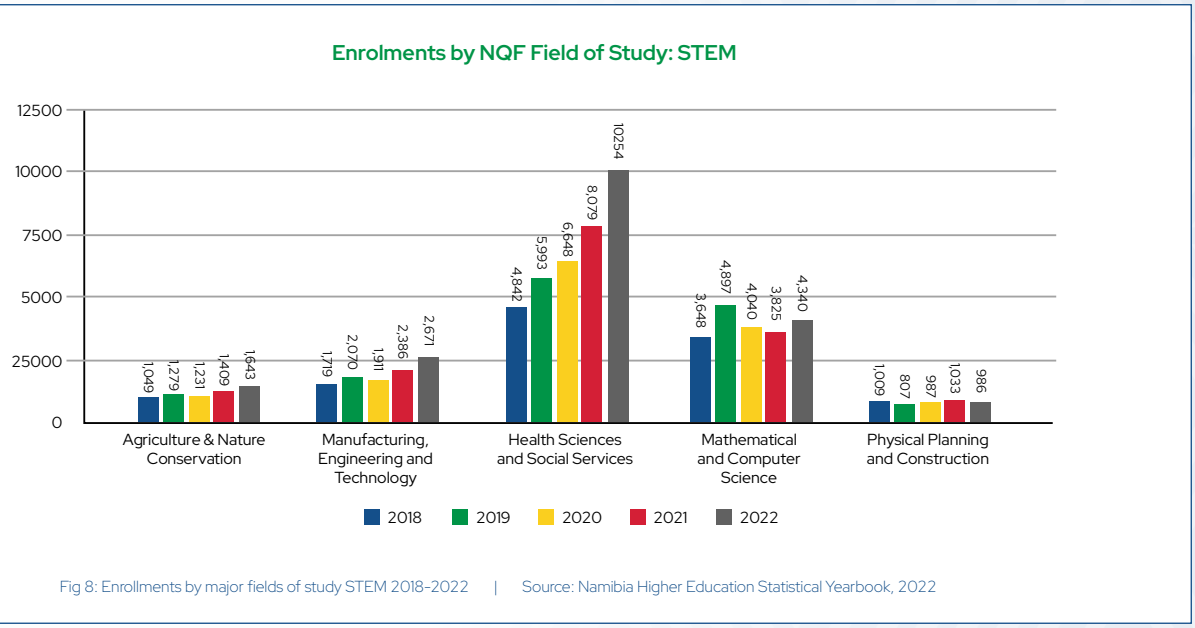


Fig 8: Enrollments by major fields of study STEM 2018-2022 | Source: Namibia Higher Education Statistical Yearbook, 2022

The enrollment data by major fields of study from 2018 to 2022 provides important insights into the distribution of students across different academic disciplines and occupations. The HEIs offerings are classified under 12 broad fields of study. These fields of study are classified under STEM and NON-STEM categories.

The STEM occupations/ disciplines are indicated below:

1. Agriculture and Nature Conservation,
2. Manufacturing, Engineering and Technology,
3. Health Sciences and Social Services,
4. Physical, Mathematical and Computer Sciences
5. Physical Planning & Construction

Non-STEM occupations/disciplines are:

1. Business, Commerce, and Management,
2. Communication Studies and Languages,
3. Culture and the Arts
4. Education, Training, and Development,
5. Human and Social Studies
6. Law, Military Science, and Security,
7. Services and Life Sciences.

The 2022 NCHE report indicates that the Health Sciences and Social Services field consistently has the highest enrollments across all years, with enrollments increased significantly from 4,842 in 2018 to a peak of 10,254 in 2022. The dominance of this field suggests a strong pipeline of health and social service professionals entering the workforce, aligning with the growing demand for healthcare workers due to population growth and increased health challenges. It is noteworthy too to indicate that demand for health professionals is growing worldwide and health care workers are in demand across the world.

Despite high enrollments in the health sector, there are persistently low enrollments in sectors with high employment potential in Namibia, such as agriculture, construction, and manufacturing.

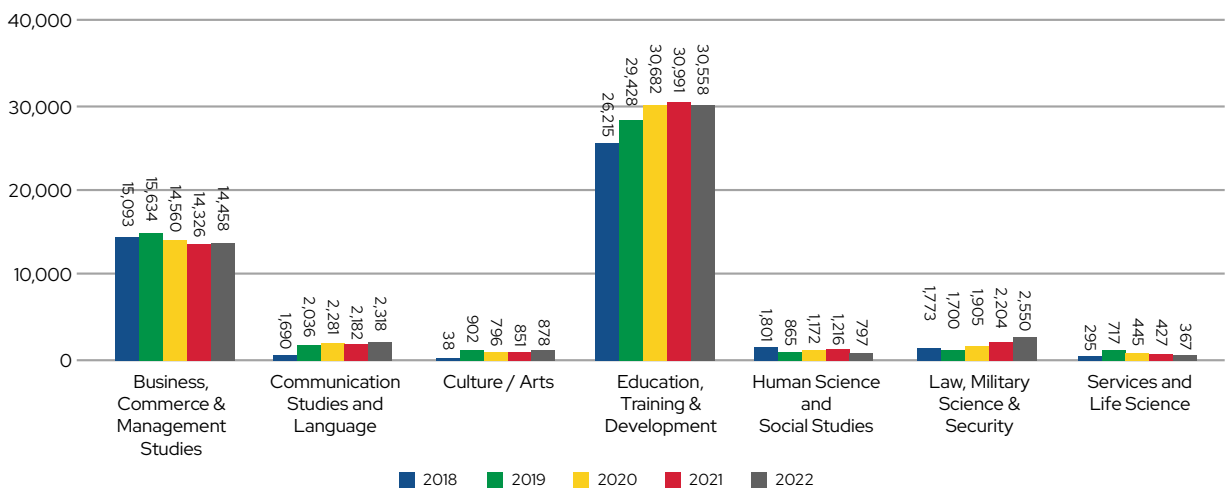


Fig 9: Enrollments by major fields of study non- STEM 2018-2022 | Source: Namibia Higher Education Statistical Yearbook, 2022

An analysis of non-STEM enrollments by NQF Field of Study from 2018 to 2022 indicates that the most significant growth was observed in the Education, Training, and Development field, which dominated enrollments with consistent growth, peaking in 2021 before a slight decline in 2022. This increase highlights the growing focus on training teachers and educators, possibly in response to the need for more qualified teachers in the country and also perhaps since this is the most accessible field in most of the HEIs.

On the other hand, the decline in Business Commerce & Management studies may suggest a saturation of business graduates or a shift in student preferences toward fields with more immediate job prospects, like education. This could have long-term effects on the availability of managerial and entrepreneurial talent in the workplace.

Fields such as Culture/Arts and Services/Life Sciences, have consistently low enrolments, with Services showing a significant decline, indicating weak demand, limited career pathways or simply a lack of interest in these fields. Fields like Education and Law thrive due to societal demand and job security, while Culture/Arts and Services struggle with low awareness and perceived career opportunities.

Table 6: Completion status by STEM AND NON-STEM, 2022

NQF Field of Learning	Completed Studies	Not Completed Studies	Total	Completed Studies	Not Completed Studies	Total
Agriculture and Nature Conservation	240	475	715	33.6%	66.4%	100%
Manufacturing, Engineering and Technology	408	454	862	47.3%	52.7%	100%
Health Sciences and Social Services	1,762	1,543	3,305	53.3%	46.7%	100%
Physical, Mathematical and Computer Sciences	646	1,105	1,751	36.9%	63.1%	100%
Physical Planning and Construction	188	319	507	37.1%	62.9%	100%
STEM Total	**3,244**	**3,896**	**7,140**	**45.4%**	**54.6%**	**100%**
Business, Commerce, and Management	2,502	5,790	8,292	30.2%	69.8%	100%
Communication Studies and Languages	382	413	795	48.1%	51.9%	100%
Culture and the Arts	94	164	258	36.4%	63.6%	100%
Education, Training, and Development	5,283	5,626	10,909	48.4%	51.6%	100%
Human and Social Studies	128	236	364	35.2%	64.8%	100%
Law, Military Science, and Security	443	417	860	51.5%	48.5%	100%
Services and Life Sciences	64	136	200	32.0%	68.0%	100%
Non-STEM Total	**8,896**	**12,782**	**21,678**	**41.0%**	**59.0%**	**100%**
Grand Total	12,140	16,678	28,818	42.1%	57.9%	100%

Source: Namibia Higher Education Statistical Yearbook, 2022

The table above highlights the completion status of studies in Namibia for 2022, categorizing fields into STEM and Non-STEM. Overall, **STEM fields** show a slightly higher completion rate (45.4%) and highest completion rate in Health Sciences and Social Services, while Manufacturing, Engineering and Technology, Agriculture and Nature Conservation and Physical Planning and Construction are on the lower percentage of completion rate. **The Non-STEM fields** have a completion rate of 45%, with Law, Military Science, and Security, Human and Social Studies, Culture, Education, Training and Development and Arts having the highest completion rate, while Business, Commerce and Management, Services and Life science have the lowest completion rates.

In alignment with Table 5, Namibian HEIs predominantly supply skills in Health Sciences and Social Services, Law, and Security, Culture, Education, Training and Development and Arts, Communication Studies and Languages, while Manufacturing, Engineering and Technology, Agriculture and Nature Conservation, Physical Planning and Construction and Physical, Mathematical and Computer Sciences are on the lower supply of skills.

According to the Task Force on the Fourth Industrial Revolution (2022), educational statistics for Namibia in comparison with other countries indicate the critical importance of investing in education if Namibia seeks to reap the benefits of 4IR. Although Namibia does not score lowest in the region for investment and enrolment into tertiary education, it does score lowest for ICT graduates, which are essential for 4IR. This is corroborated by the findings that the quality of mathematics and science education are below average. Availability of scientists, technologists and engineers as well as availability of advanced digital skills are lowest among the African countries assessed. Moreover, 4IR technologies are also changing the way education and teaching are imparted. The assessment further shows that the Namibian style of teaching needs to change and that the quality of vocational training is considered below average. Therefore, an education reform across all layers is necessary to provide for the future of work and the 4IR, from basic education to tertiary education and lifelong learning.

This section demonstrates that the education system plays a fundamental role in determining the supply of skills in Namibia's labour market. Despite progress in expanding access to education, key challenges of skills mismatch remain a challenge in aligning educational outcomes with the evolving demands of the economy and labour demands. The section below focuses on the response of the demand of the labour market to the skills supplied.

6.3.1 Skills supply from HEIs in the Labour Market

HEIs play a pivotal role in supplying skills to the labour market. Higher education enrollments, as shown by the consistent rise in enrollment in both public and private HEIs, suggests that an increasing number of Namibians are being trained in a variety of disciplines. The increasing number of completions would also suggest that there is a growing pool of skilled individuals entering the labour force. The Employment survey of 2023, in Table 7 depicts that Professionals (12.5%) Skilled agriculture, forestry and fishery occupations (9.9), Technicians and associate professionals, Service and sales workers (13,4%) skills may be supplied by HEIs graduates and are occupied by a skilled workforce. Semi-skilled occupations such as craft and related trade workers (11,7%), Plant and machine operators and assemblers (4,3%), Elementary occupations (21%) may also be used as entrance positions for HEIs and TVET graduates.

Table 7: Employed Persons by Occupation

Occupation	2018	2023	%
Manager	11,825	47,174	8.6
Professionals	53,032	68,541	12.5
Technicians and associate professionals	38,002	50,393	9.2
Clerical support workers	39,130	28,482	5.2
Service and sales workers	105,774	73,294	13.4
Skilled agriculture, forestry and fishery	110,664	53,934	9.9
Craft and related trade workers	90,432	63,812	11.7
Plant and machine operators, and assemblers	33,544	23,565	4.3
Elementary occupations	211,246	118,947	21.8
Armed forces occupation	9,475	18,642	3.4
Not elsewhere classified	22,617	20	0.0
Total	725,741	546,805	100

Source: Namibia Labour Force Survey, 2018,Population Housing Census, 2023

Table 8 depicts that there is a disparity on the list of occupations/field of studies supplied by the HEIs and the list of occupations that is reported by the Labour Survey of 2018 and the NPHC 2023. It is therefore difficult to make a clear comparison between what the skills development system is producing and the uptake from the labour end. This could also imply that there are new occupations that are not being recorded in Namibia. New occupations emanate from investments, economic growth and development. As economies grow and become more complex, new industries and sectors emerge, leading to the need for specialized occupations. The advent of the Fourth Industrial Revolution (4IR) has ushered in significant advancements across a range of fields, including advanced robotics, autonomous transportation, artificial intelligence, machine learning, advanced materials, biotechnology, and genomics. This era is characterized by the convergence of digital, physical, and biological systems, fundamentally transforming industries, economies, and societies at an unprecedented pace and scale.

Table 8: Occupations supplied by High learning Institutions vs Labour Survey occupations

NQF Field of Learning	Completed Studies
Agriculture and Nature Conservation	Manager
Manufacturing, Engineering and Technology	Professionals
Health Sciences and Social Services	Technicians and associate professionals
Physical, Mathematical and Computer Sciences	Clerical support workers
Physical Planning and Construction	Service and sales workers
Business, Commerce, and Management	Skilled agriculture, forestry and fishery
Communication Studies and Languages	Craft and related trade workers
Culture and the Arts	Plant and machine operators, and assemblers
Education, Training, and Development	Elementary occupations
Human and Social Studies	Armed forces occupation
Law, Military Science, and Security	Not elsewhere classified
Services and Life Sciences	

6.3.2 Comparative Analysis on TVET and HEIs supply to the Labour Market

Namibia's economic growth significantly influences the demand for skills by generating new job opportunities and heightening the need for specialized expertise. This growth also shapes educational priorities, encourages innovation, and exposes existing skill shortages. To harness the advantages of economic expansion and overcome these challenges, collaborative efforts are essential among stakeholders such as the government, educational institutions, and industry leaders. By working together on targeted skill training programs that match market demands, Namibia can ensure sustained growth through strategic investment in skills development. This section examines the contribution of higher learning institutions to skills supply across various sectors, recognizing skills supply as one of key drivers of sectorial growth

Table 9 provides a comparative analysis of occupations supplied by TVET and HEIs by examining student completion levels against industry/sector employment. The data reveals an undersupply of graduates in specific TVET and HEI fields, including Agriculture, Forestry, Fishing, Manufacturing, and Engineering and Technology. These findings are significant given the high employment rates in sectors such as Agriculture, Forestry, Fishing, Wholesale and Retail, and Manufacturing, suggesting a future increase in occupational demand within these areas.

Additionally, emerging sectors in Namibia, such as green hydrogen and biomass sub-energy, show an undersupply of relevant occupations, with some not even being listed. Conversely, HEIs exhibit an oversupply of occupations in Business, Commerce, and Management, Education, Training, and Development, and Health Sciences and Social Services.
It is further opined that there is a high demand for administrative support, public administration services that can serve as an indication of the lack of digital services and AI in the public and private sectors.

Table 9: Comparative Analysis of Skills Supplied by TVET, High Learning Institutions and employment by industry sectors.

Occupations completed at HEI			Occupations completed by TVET			Employment by Industry		
NQF Field of Learning	Completed Studies	%	NQF Field of Learning	Completed Studies	%	Industry	Number	%
Agriculture and Nature Conservation	240	0.02	Office Administration	925	19.3	Agriculture, forestry and fishing	88,277	16.1
Manufacturing, Engineering and Technology	408	0.03	Mechanical & Automotive Engineering	453	9.5	Wholesale and retail trade	54,618	10
Health Sciences and Social Services	1,762	14.5	Plumbing & Pipe Fitters	430	9	Manufacturing	53,491	9.8
Physical, Mathematical and Computer Sciences	646	0.05	Electrical & Electronic Engineering	389	8.1	Administrative and support service activities	50,884	9.3
Physical Planning and Construction	188	0.02	Hospitality & Tourism	327	6.8	Activities of households as employers	43,149	7.9
STEM Total	3,244		Welding & Metal Fabrication	305	6.4	Education	38,209	7
Business, Commerce, and Management	2,502	20.6	Business Management	288	6	Public administration and defence; Communication	36,012	6.6
Communication Studies and Languages	382	3.1	Joinery & Cabinet Making	215	4.5	Accommodation and food service activities	29,324	5.4
Culture and the Arts	94	0.8	Accounting, Economics and Finance	204	4.3	Construction	28,661	5.2
Education, Training, and Development	5,283	43.5	Bricklaying & Plastering	166	3.5	Other service activities	24,064	4.4
Human and Social Studies	128	1.1	Human Resource Management	125	2.6	Human health and social work activities	18,448	3.4

Occupations completed at HEI			Occupations completed by TVET			Employment by Industry		
NQF Field of Learning	Completed Studies	%	NQF Field of Learning	Completed Studies	%	Industry	Number	%
Law, Military Science, and Security	443	3.6	Education	96	2	Transportation and storage	18,137	3.3
Services and Life Sciences	64	0.53	Clothing Production	86	1.1	Financial and insurance activities	16,691	3.1
Non-STEM Total	8,896		Counselling	74	1.5	Professional, scientific and technical	15,736	2.9
Physical, Mathematical and Computer Sciences	1,2140	87.9145	Wholesale& Retail	74	1.5	Mining and quarrying	4,337	2.6
			Airconditioning and Refrigeration	64	1.3	Information and communication	8,164	1.5
			Fitter and Turner	57	1.2	Arts, entertainment and recreation	3,175	0.6
			Marketing Management	54	1.1	Water supply; sewerage, waste management	2,379	0.4
			Occupational Health and Safety	47	1	Electricity, gas, steam and air condition	1,601	0.3
			Boilermaking	44	0.9	Real estate activities	1,011	0.2
						Activities of extraterritorial organizations and bodies	401	0.1
						Not elsewhere classified	36	0
						Namibia	**546,805**	**100**

Recommendations

1. Realignment of the Namibian Classification of Occupations, across the HEIs and align it to Labour Force surveys, economic sectors to supply skills responsive to the labour market
2. HEIs and TVET institutions to develop short courses and certifications that are aligned to labour market demands to ensure re-skilling and upskilling
3. Establish Industry or Sector Based Committees that regulate and quality assure training from NQF Level 7 to 10.
4. Critical Skills Identification: Develop a national system for identifying critical skills, supported by a strategic implementation plan.

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MICRO, SMALL, AND MEDIUM ENTERPRISES

7. MICRO, SMALL, AND MEDIUM ENTERPRISES

The former Ministry of Industrialisation and Trade (MIT) formally launched the Micro, Small and Medium Enterprises (MSME) Policy, which received Cabinet and Parliamentary approval in 2016. The policy's primary objectives are to promote the development of MSMEs through the adoption of international best practices aimed at modernising and upgrading technology. Following extensive public-private dialogue with key stakeholders, the Ministry also introduced ten targeted growth strategies designed to enhance value addition, expand industrial output, and accelerate economic growth.

These growth strategies focus on sectors including cosmetics, game meat products, gemstone and jewellery products, handicrafts, leather and leather products, metal fabrication, seafood, Swakara and wool products, taxidermy products, and wood charcoal.

The national MSME policy establishes a regulatory framework intended to create an enabling environment for both public and private sectors to foster and support small enterprise development. This policy complements the 1997 SME Policy and Programme on Small Business Development, which addresses challenges related to finance, marketing, technology, infrastructure, skills development, and institutional support in alignment with Namibia's Vision 2030[78]. Notably, in 2022, the MSME mandate was transferred to the Namibia Investment Promotion and Development Board (NIPDB).

Currently, MSMEs in Namibia lack a clear definition within key data sources such as the Labour Force Survey, occupational reporting, sector employment statistics, and skills supply from Technical and Vocational Education and Training (TVET) and higher learning institutions. Entrepreneurship is offered as a module within TVET programs, while HEIs provide courses in Business, Commerce, and Management. It is generally assumed that graduates from these programs possess foundational knowledge relevant to the MSME ecosystem and its participation. However, there is limited empirical data on the actual skills supply to the MSME sector.

Further analysis confirms that the MSME growth strategies are concentrated in the aforementioned sectors. To maximise MSME participation and impact, it is recommended that the MSME policy be continuously aligned with emerging sectors and market opportunities.

This structured approach aims to strengthen the MSME sector's contribution to Namibia's industrialisation and economic diversification goals.

Recommendations

1. Develop and implement a competency based curriculum at TVET institutions and HEIs to offer Business and Entrepreneurship courses that can lay a firm foundation for aspiring entrepreneurs to obtain basic knowledge and skills to understand the MSME ecosystem.

2. Align the growth strategies for MSMEs with National Development Strategies and economic sectors to enable MSME's to participate in the economic activities and to ensure sustainable development.

3. Establish a MSME Entrepreneurship Academy and design an incubation center to promote self employment. The center will offer business model development, business development services, and incubation programs with incubator certification. Implement customized business management and development training to lay a practical understanding of business.

[78] https://neweralive.na/msme-policy-aims-to-foster-small-business-development

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LABOUR MARKET

7. LABOUR MARKET

8.1 Labour Market Profile

A Labour Market Profile is a comprehensive overview of the current state of a particular labour market. It typically includes key indicators that provide insights into employment, unemployment, and workforce participation. These profiles help government bodies, businesses, researchers, and policymakers assess labour supply, demand, and trends.

This section will focus on the labour market profile, the economic sectors and the skills demanded by the labour market.

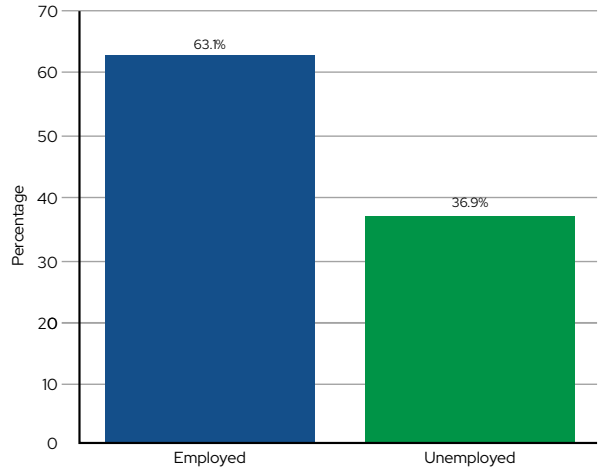

Fig: 10 Labour Market Overview

Source: Namibia Population Housing Census, 2023

The Namibia Labour Market Overview reveals a dual challenge of high unemployment and low labour force participation. Of the population aged 15 and above, only 46.2% are in the labour force, with 63.1% employed and a concerning 36.9% unemployed highlighting significant structural issues in job creation and skills absorption. Even more striking is the 53.8% of the population outside the labour force, where 33.9% are part of the potential labour force willing but not actively seeking work indicating a large, underutilized human resource base. Meanwhile, 66.1% of those outside the labour force report no interest in employment, which may reflect systemic discouragement, social obligations, or reliance on informal support systems. This dual scenario of high joblessness and high labour inactivity underscores the urgent need for targeted labour market policies, including skills development, employment incentives, and inclusive economic programmes to reactivate and integrate these individuals into productive economic activity.

Employment is defined as persons of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit, whether at work during the reference period (i.e. who worked in a job for at least one hour) or not at work due to temporary absence from a job, or to working-time arrangements. Ages 15 and older are generally considered the working-age population[79].

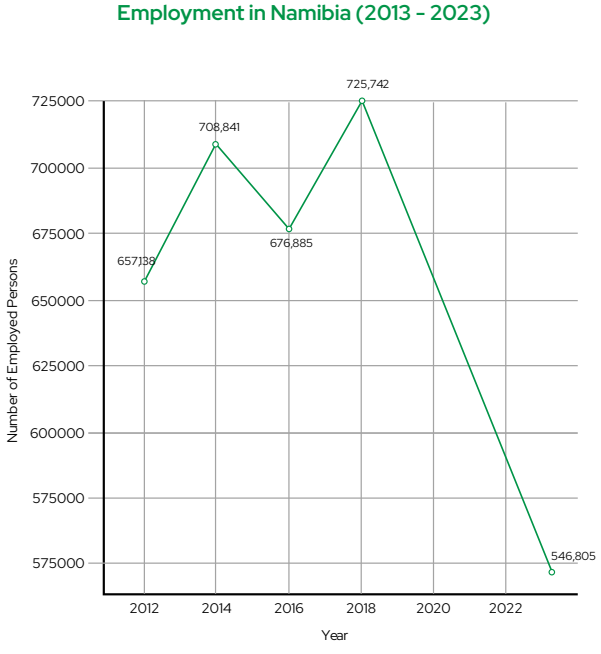

Fig 11: Total Employment in Namibia (2014-2023)

Source: Namibia Statistics Agency

[79] Word Bank Group

The line chart presents Namibia's employment figures across selected years: 2012, 2014, 2016, 2018, and 2023. Between 2012 and 2018, employment fluctuated moderately, rising from 657,138 in 2012 to a peak of 725,742 in 2018 an increase largely attributed to economic growth and policy efforts during that period. However, in 2023, the employment figure sharply declines to 546,805, reflecting a significant drop of nearly 179,000 jobs compared to 2018.

It is crucial to interpret this apparent decline with caution. The 2023 Population and Housing Census (PHC) Labour Report is based on the strict definition of work, which includes only those engaged in paid employment or clearly defined productive activities. In contrast, the employment statistics from 2012 to 2018 are based on the broad definition of work, which captures a wider spectrum of economic activities, including subsistence farming and informal or unpaid work.

This methodological shift means that the 2023 figure is not directly comparable to previous years. The observed decline may not necessarily reflect a collapse in employment levels but rather a change in how employment is defined and measured.

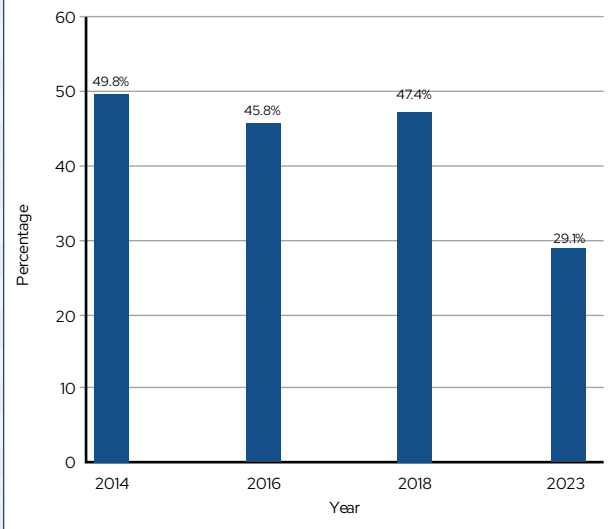

Fig 12: The employment-to-population ratio

Source: Namibia Statistics Agency

Figure 12 illustrates the Labour Force Absorption Rate in Namibia across four key years: 2014, 2016, 2018, and 2023. From 2014 to 2018, the absorption rate fluctuated modestly starting at 49.8 percent in 2014, dipping to 45.8 percent in 2016, and rising again to 47.4 percent in 2018. These figures suggest relative consistency in the proportion of the working-age population that was employed during that period, reflecting a labour market that, while strained, maintained moderate levels of employment engagement.

However, in 2023, the absorption rate drops sharply to 29.1 percent, representing a dramatic decline. While this might suggest a significant labour market contraction, it is methodologically incorrect to compare the 2023 figure directly to previous years. This is because the 2023 Population and Housing Census (PHC) Labour Report uses the strict definition of work, which includes only those engaged in formal, paid, or clearly defined productive activities. In contrast, the data from 2014 to 2018 are based on the broad definition of work, which also encompasses informal, subsistence, and unpaid labour, such as farming or caregiving.

Therefore, the sharp decline in the 2023 absorption rate is largely due to a change in measurement methodology, not necessarily an actual collapse in employment.

Table 10: Employment by industry

Employed population by industry in 2023		
	PHC 2023	
Agriculture, forestry and fishing	Number	%
Wholesale and retail trade	88,277	16.1
Manufacturing	54,618	10.0
Administrative and support service activities	53,491	9.8
Activities of households as employers	50,884	9.3
Education	43,149	7.9
Public administration and defence; Communication	38,209	7.0
Accommodation and food service activities	36,012	6.6
Construction	28,661	5.2
Other service activities	24,064	4.4
Human health and social work activities	18,448	3.4
Transportation and storage	18,137	3.3
Financial and insurance activities	16,691	3.1
Professional, scientific and technical	15,736	2.9
Mining and quarrying	14,337	2.6
Information and communication	8,164	1.5
Arts, entertainment and recreation	3,175	0.6
Water supply; sewerage, waste management	2,379	0.4
Total	725,741	100
Electricity, gas, steam and air condition	1,601	0.3
Real estate activities	1,011	0.2
Activities of extraterritorial organizations and bodies	401	0.1
Not elsewhere classified	36	0.0
Namibia	546,805	100

Source: Namibia Labour Population Housing Census, 2023

Table 10 illustrates employment distribution across industries/sectors in Namibia, revealing a significant discrepancy between graduate supply and labour market demand. Namibia currently experiences relatively lower employment rates in sectors such as education (7%), public administration (6.6%), and health (3.4%), while there are higher graduation rates for these fields of study at HEI. This graduate surplus contributes to elevated graduate unemployment as a substantial number of qualified individuals vie for limited positions. Conversely, sectors exhibiting high growth and considerable employment, such as agriculture (16.1%), wholesale and retail trade (10%), and manufacturing (9.8%), are under supplied in terms of graduate output. These sectors require practical, technical, and entrepreneurial skills that are not adequately provided by current HEI and TVET programs. This imbalance exacerbates Namibia's overall unemployment rate, which stood at 36.9 percent in 2023, with youth unemployment being particularly acute, surpassing 40 percent in ten out of Namibia's fourteen regions.

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DEMAND FOR SKILLS IN THE LABOUR MARKET

9. DEMAND FOR SKILLS IN THE LABOUR MARKET

The demand for skills in Namibia's labour market is shaped by a combination of economic growth patterns, sectoral needs, supply of skills, and employment. In this section, the demand of skills will be analysed according to the employment by industry, general occupations within the labour market through job posting across the sectors and any other occupational listing.

Namibia's official unemployment rate stood at 36.9 percent in 2023, reflecting labour market challenges including underemployment and discouraged workers. Out of a working-age population of 1,876,122, the labour force comprises about 867,247 economically active individuals. Of these, 546,805 are employed, leaving a large pool of unemployed seeking work[80].

The 2023 PHC Labour Force report indicates that there are sectors that have high and low employment that translate into a high and low demand for occupations as indicated in Table 11. The occupations in demand were identified through company adverts, recruitment agencies, NIEIS and Linked. The details of these occupations are in Annexure A.

Table 11: Occupations in demand by industry[81]

Industry	Number of employed persons	Occupations In Demand
Agriculture, Forestry and Fishing	88,277	• Logistics Manager • Administrator: Logistics Fleet • Terminal Manager • Loadmaster • Forklift Driver • Heavy Vehicle Driver
Mining and Quarrying	14,337	• Site Administrator • Mining Sales Manager • Process Operator • Senior Geological Assistant • Plant Assistant
Manufacturing	53,491	• Foreman, Operator: Skid/Teer Tractor, • Trainee Production Supervisor, • Loadmaster, • Maintenance Controller
Electricity, Gas, Steam and Air conditioning	1,601	• Chief Electro-Mechanical Technician • Electrical Controls (and automation engineering) • Repairs and Maintenance Manager
Water supply; Sewerage, Waste Management	2,379	• Hydrologist • Development Planner • Survey Technician • Works Inspector
Construction	28,661	• Head: Technical & Construction • Senior Site Manager • Site Agent • Quantity Surveyor • Blast Assistant
Wholesale and Retail trade	54,618	• Merchandiser • Retail Supervisor (Frontline) • Distributors • Retail Supervisor (Operations) • Stock Controller

[80] Namibia Population Housing Census, 2023
[81] Occupations in the Namibian labour market, sourced from job adverts from February 2025

Industry	Number of employed persons	Occupations In Demand
Transportation and Storage	18,137	• Farmer (Crop & Horticulture Production) • Farmer (Animal Husbandry) • Machinery Operator/ Farm Mechanic • Client Executive
Accommodation and Food Service activities	29,324	• Facility Maintenance (Technician & Worker) • Transfer Driver • Food Service Chef • Food and Beverage Manager
Information and Communication	8,164	• ICT Technician • Database, System & Network Administrator • Web Developer • Broadcasting, Planning & Implementation Technician
Financial and Insurance Activities	16,691	• Risk and Audit Manager • SAP EHS Consultant (M/F) • Insurance Intermediary • Tax Assistant Manager: Compliance & Reporting
Real Estate Activities	1,011	• Real Estate Agent
Professional, Scientific and Technical	15,736	• Strategic Executive: Human Capital, Investment and Industrialization • Head: Legal • Manager: Governance, Risk & Compliance • Technologist, Laboratory Technician: Physics • Animal Scientist
Administrative and Support Service Activities	50,884	• Office Administrator • Clerk Administration • Personal Assistant • Secretarial Assistant • Receptionist
Public Administration and Defence; Communication	36,012	• Office Administrator: Corporate Communication and Marketing • Human Resource Administrator • Policy Analyst
Education	38,209	• Professor in Digital Humanities and English (Humanities and Arts Department) • Lecturer (Occupational Therapy) • Professor/Associate Professor (Physiology) • Lecturer: Public Administration • Examination Officer

Industry	Number of employed persons	Occupations In Demand
Human Health and Social Work activities	18,448	• Occupational Health & Safety Officer (Supervisor) • Firefighter & Rescue Operator • Namibia Health & Safety Manager • Medical Technologist
Arts, Entertainment and Recreation	3,175	
Other Service Activities	24,064	• Till Packer • Beauty Advisor • Events Officer • Gardner • Nightman/Boiler Operator
Activities of households as employers	43,149	• General Labourer • General Worker • Foreman
Activities of extraterritorial organizations and bodies	401	• NDC Energy Expert
Not elsewhere classified	36	
Namibia	546,805	

9.1 Unemployment

Unemployment is a significant socio-economic challenge in Namibia, affecting a large portion of the population and influencing the overall development of the country. The unemployment issue in Namibia can be attributed to several factors, including structural imbalances in the economy, a mismatch between the skills of the labour force and market demand, and limited job creation in key sectors.

Namibia's official unemployment rate has fluctuated over the years, with significant disparities based on age, gender, and region. High youth unemployment has been one of the most pressing concerns, as it creates a cycle of poverty, inequality, and social instability. Additionally, unemployment in rural areas remains disproportionately high compared to urban centers, partly due to underdeveloped infrastructure and fewer economic opportunities.

The unemployment rate is widely regarded as one of the key labour market indicators and a good measure of employment creation and participation in economic activities in the country. A lower unemployment rate signifies an economy having the capacity to absorb available people of working age, while a higher rate signifies an economy that is unable to absorb available people of working age[82].

Fig 13: Unemployment in Namibia | Source: Namibia PHC Labour Force Report, 2023

[82]Namibia Labour Force Survey, 2018

The two charts provide a detailed snapshot of Namibia's unemployment landscape in 2023, disaggregated by location, sex, and age group.Namibia's persistently high unemployment rate currently standing at 36.9 percent is closely linked to systemic challenges within its education training ecosystem and a low economic growth Firstly, low graduation rates from both Higher Education Institutions (HEIs) and Technical and Vocational Education and Training (TVET) systems limit the flow of skilled individuals into the labour market. While tertiary attainment has improved slightly over the years, it still falls short of the levels needed to meet industry demands, particularly in key growth sectors such as engineering, and IT. Secondly, the high failure and dropout rates in basic education severely reduce the number of learners who qualify for further education and training. Many young people exit the system without foundational skills or qualifications, making them ineligible for both TVET and university admission, and leaving them vulnerable to long-term unemployment or underemployment.

The high unemployment rate at primary and secondary levels culminates in high youth unemployment. This educational bottleneck contributes directly to a labour market mismatch, where employers struggle to find adequately trained workers, even as a large share of the population remains jobless.

Globally the youth have been disproportionately affected by COVID-19 and youth labour markets are now being buffeted by the lingering impacts of the pandemic, geopolitical risks and macroeconomic risks such as the impact of supply chain disruptions and rising inflation, particularly that of food and energy. There is also the potential permanent damage wreaked by these crises on the fabric of labour markets. As countries seek to address these multiple challenges, they must also not lose sight of longer-term priorities. In particular, targeted investment in the green, blue (ocean), digital, creative and care economies hold great potential to provide decent jobs for young people while setting economies on path towards greater sustainability, inclusiveness and resilience.[83]

Table 12: Unemployed by educational level and sex

Highest Educational Level Completed	Male			Female		
	Unemployed	Labour Force	Rate	Unemployed	Labour Force	Rate
None	14,950	48,200	31.0	11,871	24,229	49.0
Informal	508	1,472	34.5	545	1,314	41.5
Primary School	25,675	68,985	37.2	20,277	38,906	52.1
Secondary School	98,478	253,541	38.8	108,191	247,935	43.6
Technical/vocational certificate or Diploma	5,621	16,362	34.4	2,758	6,504	42.4
Tertiary Education	8,759	55,109	15.9	14,910	78,788	18.9
Other	147	1,068	13.8	273	1,417	19.3
Don't know	4,791	14,986	32.0	2,688	8,431	31.9
Namibia	**158,929**	**459,723**	**34.6**	**161,513**	**407,524**	**39.6**

Source: Namibia PHC Labour Force Report, 2023

The data on unemployment by highest educational level completed in Namibia (2023) reveals a clear link between education and employability, with higher educational attainment generally leading to lower unemployment rates. Individuals with tertiary education have the lowest unemployment, 15.9 percent for men and 18.9 percent for women highlighting the value of advanced qualifications. Conversely, those with only primary education or none at all face significantly higher unemployment, particularly women, whose rates reach 52.1 percent and 49.0 percent, respectively. Secondary education, while the most common level attained, does not guarantee job security, with unemployment rates of 38.8 percent for men and 43.6 percent for women. Technical and vocational training offers moderately better outcomes, especially for men, indicating the need to strengthen and better align such programmes with market demand. Across all education levels, women experience higher unemployment than men, underscoring persistent gender disparities in the labour market. Overall, the data signals a pressing need for more inclusive, skills-aligned education and employment policies to address structural inequality and improve job prospects for all.

Recommendations

Have a broad-based approach to digital literacy in Basic, TVET and HEI curricula and make it compulsory coupled with promotion of the acquisition of appropriate technical and digital skills for young people to enable them to take the full advantage of the new opportunities created through the transition to greener and more digital economies.

[83] https://www.ilo.org/publications/major-publications/global-employment-trends-youth-2022-investing-transforming-futures-young

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CRITICAL SKILLS IN NAMIBIA

10. CRITICAL SKILLS IN NAMIBIA

Critical skills are defined as essential competencies necessary for economic growth and development, particularly in high-demand sectors. A comparative analysis was conducted examining the top three sectors with the highest employment levels alongside the supply of skills within these sectors. To deepen the understanding of future skills requirements, the Namibia Investment Promotion and Development Board (NIPDB), in collaboration with the International Labour Organization (ILO), has developed a dedicated skills strategy for the Energy sector. Additional sector-specific studies will be undertaken in the future to further inform skills development efforts.

10.1 Manufacturing and Engineering

According to the Labour Survey 2023, Manufacturing employment stands at 9.9% of the total employed population. It is an important indicator under SDG-9, which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. It is significant because manufacturing is often seen as a driver of economic growth, technological innovation, and employment opportunities[84]. The skills supplied by HEIs in terms of Manufacturing, Engineering and Technology, stands at 408 out of 12,140, which translates to 0.03% overall completion rate. Skills gaps for specific occupations in the labour market will translate into significant skills shortages in the future. Furthermore, a notable disparity exists within Namibia's labor market concerning the availability of technicians. While vocational training institution graduates attain qualifications at level 4, and higher education institution graduates at level 7, a deficiency is apparent at level 6, specifically in the supply of technicians for the Manufacturing Sector.

10.2 Technology and 4IR

Technological advancement and the Fourth Industrial Revolution (4IR) are contributing to an increased demand for highly skilled labor, which is closely correlated with technological progress. For instance, rapid progress in information technology generates new demand for computer-related labor. Education is a crucial component of the 4IR and a key prerequisite for 4IR readiness as defined by our framework. The automation and adoption of advanced digital technologies throughout society and the economy are placing pressure on the development of educational programs in complex fields, such as artificial intelligence, advanced robotics, biotechnology, new materials, and autonomous vehicles[85]. The wholesale and retail trade, as well as the repair of motor vehicles and motorcycles sector, while offering a potential pathway for the automotive industry, currently primarily requires low-value skills in Namibia.

10.3 Oil and Gas

Namibia has witnessed a notable increase in oil and gas discoveries, predominantly within the offshore Orange Basin. Key discoveries, namely the Graff-1, Venus-1, and Mopane fields, hold the capacity to substantially augment Namibia's economic landscape. These discoveries, which are attracting prominent oil entities, are projected to potentially triple the nation's Gross Domestic Product and facilitate Namibia's transformation into a net exporter of electricity via gas-to-power initiatives. Namibia has traditionally not offered training in this specific field, with exceptions of the students funded by Petrofund to study in NQF Level 7-9 in oil & gas. Within the TVET space, some occupations provided in the country also have a bearing on the oil & gas sector but at a very fundamental level. The country lacks specialisations in oil & gas as well as on-the-job experiential learning, making skills in this area critical.

10.4 Agriculture

According to Namibia's Labour Force Survey, agriculture remains one of the most important sectors for employment, particularly in rural areas, where it provides livelihoods for about 20% of the population[86]. Despite its significance, the sector continues to face substantial skills gaps and challenges related to workforce development.

A key concern is the low rate of formal training and qualification among agricultural workers. In 2022, the National Council for Higher Education (NCHE) reported that out of 12,140 graduates in Namibia, only 240 completed studies in agriculture, representing a mere 1.97% completion rate[87]. This reflects a broader issue: only about 11.2% of people employed in agriculture are considered skilled, leaving nearly 89% of the sector's workforce unskilled . This lack of technical expertise and skilled labor inhibits innovation, productivity improvements, and the sector's ability to adapt to changing market dynamics and technological advancements. Agriculture in Namibia is a broad sector encompassing both commercial and subsistence farming systems, and it intersects with several sub-sectors across the value chain-from production and processing to distribution and market access.

[84]https://census.nsanamibia.com/wp-content/uploads/2025/01/2023-PHC-Labourforce-Report.pdf
[85]https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf
[86]NPC- is agricultural productivity an engine for growth? 2018
[87]Namibia Higher Education Statistical Yearbook, 2022
[88]New Era- Namibia Introduces Agricultural Vocational Training, 2018

10.5 Maritime

Maritime encompasses activities, industries, and professions related to the sea, including shipping, navigation, and the sustainable use of marine resources. In Namibia, the maritime industry is a vital pillar of the national economy, underpinning trade, employment, and regional integration. Namibia's blue economy spans fisheries and aquaculture, marine mining, transport and logistics, water desalination, and tourism[89]. The Namibian Ports Authority (Namport) manages the country's two principal ports: Walvis Bay and Lüderitz. Walvis Bay is Namibia's flagship deep-water port, boasting modern container terminals with an annual capacity of 750,000 TEUs, alongside specialized bulk terminals and temperature-controlled facilities for fish and agricultural exports. It serves as a critical gateway for Namibia's seaborne trade and acts as a logistics hub for landlocked Southern African Development Community (SADC) countries such as Botswana, Zambia, Zimbabwe, and the Democratic Republic of Congo. Meanwhile, the port of Lüderitz primarily supports mining exports, including zinc and copper, and facilitates regional trade with South Africa[90].

In the fisheries sector, Namibia ranks as Africa's second-largest exporter of fish and seafood products. The industry is a significant contributor to food security, foreign exchange earnings, and employment. It encompasses wild-capture fisheries, aquaculture, processing, and export, with key products including horse mackerel and Cape hake, which enjoy strong demand in the European Union and Southern African markets.[91].

Namibia offers comprehensive maritime skills development through specialized institutions and partnerships. The Namibian Maritime and Fisheries Institute (NAMFI) provides training in navigation, marine engineering, safety, and deck/engine officer certification. Debmarine Namibia offers officer cadetships, sea-time competency training, and STCW certification aligned with international standards. The Naval Training School under the Namibia Defence Force delivers courses in seamanship, specialization, and marine defense. Accredited universities such as the International University of Management (IUM) and the Namibia University of Science and Technology (NUST) offer programs in maritime and port management, logistics, shipping, marine engineering, and vessel operations. As of 2010, the Namibian fishing industry directly employed approximately 13,380 people, a 24.5 percent increase since 2008 with the majority of jobs in onshore processing and a substantial portion in offshore vessel crews, predominantly male. The Namibian Ports Authority (Namport) employs over 700 staff across port operations, logistics, and administration, reflecting the sector's role as a significant employer.[92]

A selection of pivotal skills has been delineated as follows:

Table 13: Critical Skills in Namibia

Sector	Critical skills
Manufacturing	Electrical and mechanical technicians across all manufacturing subsectors, Computer numerical control (CNC)1 Operators, Heating, ventilation and air conditioning (HVAC) technicians, Lathe Technicians and welders.[93]
IT/4IR	Cloud computing, Artificial intelligence, Robotics, Digital literacy, Advanced coding, Advanced cybersecurity and programming

[89]Namibia Blue Economy Policy
[90]The shipping force behind Namibia, 2025
[91]Namibia Ocean & Coastal Fishing and Aquaculture Industry Report 2025
[92]Namibia Training Authority Fisheries and Maritime sector skills plan, 2014
[93]Skills Anticipation Survey- The Manufacturing Sector, 2024

Sector	Critical skills
Oil and Gas	Dive technician Mud logging engineer ROV supervisor, pilot technician, mechanical technician Slickline Engineer Wireline Engineer Coiled tubing technician Subsea technician Grit blaster Derrickman Grit blaster Sample catcher Gun technicians Geoscience Director and Data management Roughneck Routstabout
Crop Production	Horticulture (fruits, vegetables, flowers) Cereal and grain farming Industrial crops (cotton, tobacco, sugarcane) Oilseed production (e.g. sunflower, soybeans)
Animal Husbandry and Lifestock	Dairy farming Poultry farming
Aquaculture and fisheries	Inland and marine fish farming Shellfish and crustacean farming Aquatic plant production
Agricultural Technology and Innovation (AgriTech)	Precision agriculture Smart irrigation systems Drone and satellite technology Data-driven farm management
Maritime	Marine Engineer Ship's Master Engineers (civil and maintenance) Mechanical Engineer Marine Pilot Maritime Trainer/Assessor Cargo Superintendent Welder / Cutter Boiler maker Vessel Traffic Services (VTS) Operator Stevedore – Crane Driver, Equipment Operators Paramedics Fire-fighters Tug-boat Pilot

Recommendations

- The Ministry of Education, Innovation, Youth, Sports, Arts & Culture and Industry Skills Committees should determine critical skills and provide a quota to HEIs to supply those skills to the labour market.
- To address skills gaps and critical skills shortages, Namibia relaxes visa requirements for high-value skills not available domestically and enforce mandatory internships and apprenticeships.

[89]Namibia Blue Economy Policy
[90]The shipping force behind Namibia, 2025
[91]Namibia Ocean & Coastal Fishing and Aquaculture Industry Report 2025
[92]Namibia Training Authority Fisheries and Maritime sector skills plan, 2014
[93]Skills Anticipation Survey- The Manufacturing Sector, 2024

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FUTURE SKILLS

11. FUTURE SKILLS

11.1 Global Emerging occupations and future skills

The World Economic Forum's 2023 report indicates that the global economic recovery following the COVID-19 pandemic has resulted in a reconfiguration of sectoral employment distribution across industries. The past quinquennium has been marked by a complex interplay of health crises, economic instability, geopolitical tensions, and escalating social and environmental pressures. This shift in the global labor market is further propelled by technological advancements, specifically the Fourth Industrial Revolution, evolving expectations of workers and consumers, and the imperative for a transition to sustainable energy and environmentally responsible practices. These factors are collectively restructuring the sectoral composition of the workforce and generating increased demand for novel occupations.[94]Geoeconomic fragmentation, economic uncertainty, demographic shifts, and the green transition, whether considered individually or in conjunction, constitute principal factors projected to define and reshape the global labour market by 2030. These rapidly evolving transformations have been instrumental in restructuring global labour markets and influencing the future demand for employment and skill sets, thereby engendering varied economic pathways both within and between nations, encompassing both developing and developed economies.

Industries are undergoing significant evolution, and technological advancements are reshaping the job market, leading to the emergence of new occupations that necessitate specialized skills. As outlined in the World Economic Forum's Future of Jobs Report, sectors such as artificial intelligence, data science, cybersecurity, green energy, and digital transformation are experiencing rapid growth. Consequently, employers are increasingly seeking professionals who possess technical expertise, problem-solving proficiencies, and the adaptability to navigate these evolving requirements.

While a rapid transformation of global job markets and future skills is evident on a global scale, Namibia presents a distinct case with regard to the pace of this transformation. Namibia confronts specific challenges, notably the limited size and complexity of its production base, which is characteristic of many nations in Sub-Saharan Africa. This may impede Namibia's ability to expand into advanced manufacturing as it continues to develop its industrial foundation. Therefore, it is imperative that Namibia endeavors to broaden its productive capabilities, transitioning from reliance on resource-based activities within the primary sector towards the manufacturing and services sectors. This strategic shift aims to foster the production and export of more complex and advanced goods and services[95]. Experience from countries that have benefited from globalisation suggests that strategic coordination between economic sectors, trade, investment, development, and skills policies was an important factor for success.

[95] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

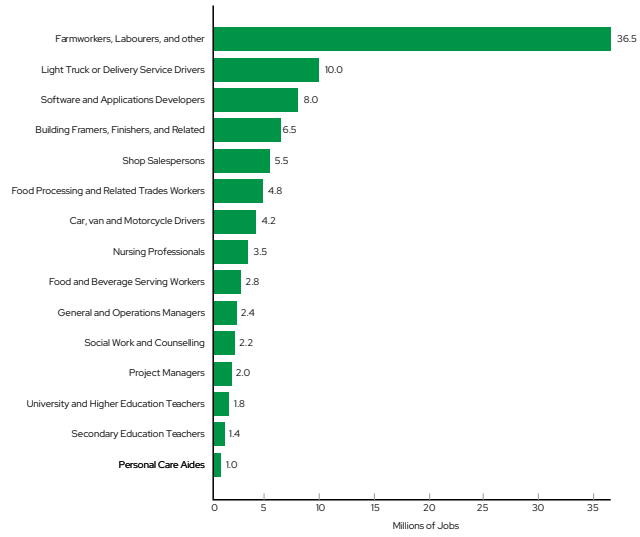


Fig 14: Top largest growing jobs 2025-2030 | Source: WEF Future of Jobs Report, 2025

The chart from the WEF Future of Jobs Report 2025 highlights the fastest-growing occupations, revealing significant trends in the evolving labour market. The most substantial growth is seen in farmworkers, labourers, and related roles, driven by increasing food production demands and labour shortages in agriculture. Additionally, the rise of e-commerce and logistics has fueled demand for light truck or delivery service drivers, as well as car, van, and motorcycle drivers, reflecting the expansion of the gig economy and last-mile delivery services. The technology sector is also experiencing strong growth, with software and applications developers in high demand due to digital transformation, automation, and AI advancements. Similarly, the growing need for project managers suggests a rising focus on overseeing technological and business innovations.

The construction and skilled trades sector is expanding, as seen in the demand for building farmers, finishers, and food processing workers, likely influenced by increasing urban development and the need for a resilient food supply chain. Meanwhile, the healthcare and social services sector is growing rapidly, with an increasing need for nursing professionals, social workers, and personal care aides, driven by aging populations, rising mental health awareness, and home healthcare services. The education sector is also seeing expansion, with growing demand for university, higher education, and secondary teachers, reflecting investments in education and workforce development.

Overall, the job market is shifting towards agriculture, transportation, technology, construction, healthcare, and education, signaling a need for continuous upskilling and adaptability to align with the future of work. These trends emphasize the importance of digital transformation, sustainability, and human-centric industries, which will shape the employment landscape in the coming years.

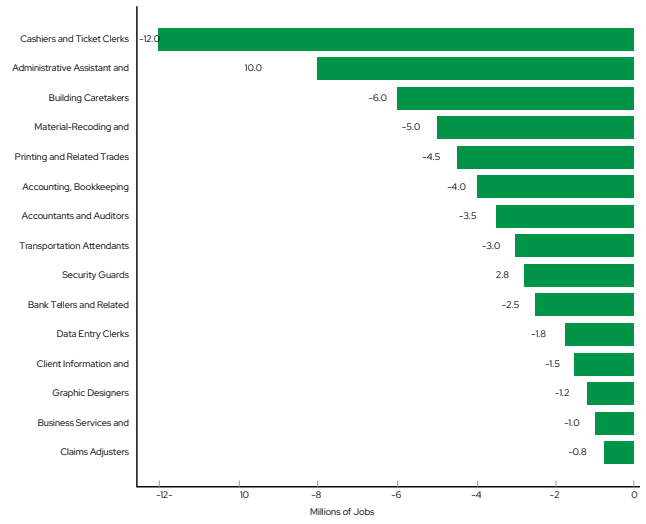


Fig 15: Top largest declining jobs 2025-2030 | Source: WEF Future of Jobs Report, 2025

The World Economic Forum Future of Jobs Report 2025 illustrates occupations experiencing the most substantial decrease, largely attributed to automation, digital transformation, and evolving market requirements. Cashiers and ticket clerks are most significantly impacted, witnessing a considerable reduction due to the growing adoption of self-checkout systems, mobile payments, and electronic ticketing. Concurrently, administrative assistants and executive secretaries face diminished demand as artificial intelligence-driven automation and productivity instruments lessen the necessity for traditional clerical duties.

Positions in building maintenance, housekeeping, and stock-keeping are also diminishing, likely due to advancements in robotics, intelligent inventory systems, and automated sanitation solutions. Furthermore, printing and associated trade professionals are encountering a downturn as the global shift towards digital media and paperless transactions persists. Roles in accounting, bookkeeping, and payroll processing are being progressively phased out due to artificial intelligence-based financial software and cloud-integrated accounting platforms that optimize operations with minimal human involvement.

The decrease in bank tellers and related clerks reflects the amplified utilization of online banking, mobile payment platforms, and automated teller machine services, which have curtailed physical visits to conventional banking establishments. Correspondingly, data entry personnel and customer service agents are being superseded by artificial intelligence chatbots, automation technologies, and machine learning algorithms that address inquiries with enhanced efficiency. Notably, graphic designers and claims adjusters are also observing a decline, possibly due to the proliferation of artificial intelligence-assisted design tools and automated data-centric claims adjudication.

Collectively, this pattern underscores the imperative for reskilling and upskilling in domains that exhibit greater resilience to automation, such as technology, data analytics, innovative problem resolution, and human-centric functions. The future workforce necessitates adaptability, with an emphasis on digital proficiency, analytical reasoning, and roles that augment artificial intelligence-driven efficiency as opposed to contesting it.

11.2 A Comparable analysis of fast growing skills and Namibian skills

The assessment of Namibia's skills demand environment demonstrates a dynamic and evolving panorama influenced by globalization, technological advancements, economic expansion, and the nation's unique production composition. Namibia provides skills that correlate with the world's rapidly emerging skill sets, as delineated in Table 14. The Namibian sectors that align with globally accelerating skills are Agriculture, Forestry, and Fishing; Wholesale and Retail Trade; and Education. Further examination reveals that Public Administration and Defense represents the fourth largest sector, suggesting a potential deficit in the adoption of Fourth Industrial Revolution technologies, Artificial Intelligence, e-governance, and advanced technology. Additional analysis indicates that Human Health and Social Work Activities, as well as Transport and Storage sectors, exhibit lower employment figures, potentially implying limited labor market absorption for skills within these sectors or an oversupply thereof. The position of General Manager is identified as a scarce skill, attributable to Namibia's predominantly youthful demographic. While the majority of the youth possess the foundational knowledge, they often lack the requisite experience, exposure, and operational proficiency for managerial roles.

[95] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

Table: 14 Comparative analysis on Global fastest and Namibia future skills

WEF Global Fast Growing Jobs	Jobs in Namibia
Agriculture (Farmworkers and Labourers, Agricultural Technicians, Agricultural Sciences Teachers)	Agriculture (Farmers (commercial and subsistence), Agricultural Technicians, Veterinarians and Veterinary Technicians, Agricultural Extension Officers, Agricultural Economists)
Transport and logistics(Logistics Coordinators, Supply Chain Analysts, Warehouse Operations Managers)	Transport (Truck and Delivery Drivers, Logistics and Supply Chain Coordinators, Fleet Managers)
Retail (Retail Salespersons, Customer Service Representatives, E-commerce Specialists)	Retail (Retail Salespersons, Store Managers, Cashiers, Inventory Controllers)
Nursing Professionals, Personal Care Aids, Social Workers and Counselling Professionals(Registered Nurses, Personal Care Aides, Social Workers, Counsellors)	Nursing Professional, Social Workers, Counselling Professionals (Registered Nurses, Enrolled Nurses, Social Workers, Counsellors)
University and Secondary Education Teachers(Secondary School Teachers, Postsecondary Educators)	Teachers(Primary School Teachers, Secondary School Teachers,Vocational Education Instructors, University Lecturers)
Food and Beverages(Food Service Managers, Chefs and Head Cooks,Food Preparation Workers)	Tourism (Tour Guides, Hospitality Managers, Wildlife Rangers,Conservation Officers)
General and Operations Managers(Operations, Managers, General Managers)	Scarce skills General Managers
Software and Applications Developers(Software Developers, Application Developers)	Software Developers
Project Managers (Project Managers, Program Managers)	Project Managers(Project Coordinators, Construction Project Managers, IT Project Managers, Development Project Managers)

Recommendations

1. For Namibia to accelerate the implementation of the National Internship Programme among the youth in the form of apprentices, students, graduates, school leavers for professional and industrial experience to enable the youth to transition in the world of work.
2. In terms of global fasting growing jobs, Namibia needs to develop mentoring and coaching programmes for General Managers and Supervisory roles to develop a leadership pipeline that can supply this skills category.

11.3 Future Skills in Namibia

This section analyzes the present state of skills within ten priority sectors, as determined by the Harvard Growth Lab[96] study in 2021. It further examines contemporary local and global trends that are projected to shape future skill requirements. The analysis identifies essential competencies that are currently in demand, as well as those anticipated to be critical in the near future. These findings are derived from a comprehensive assessment of global labor market trends, technological advancements, and economic transformations, thereby providing a holistic perspective on the evolving skill sets necessary for success in a dynamic environment[97]. It is important to note that the future skills outlined for the following sectors are not exhaustive. Each sector is accompanied by a succinct description and an outline of its future skill requirements.

[96] https://growthlab.hks.harvard.edu/files/growthlab/files/2022-02-cid-wp-405-namibia-growth-diagnostic.pdf
[97] https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf

11.3.1 Energy Sector:Renewable and non-renewable energy

Renewable energy pertains to energy derived from natural resources that are continuously and sustainably replenished. In contrast to fossil fuels, which are finite and contribute to environmental degradation through carbon emissions, renewable energy sources are characterized by their cleanliness and reduced environmental impact. Namibia possesses abundant renewable energy resources, particularly in solar and wind power, positioning it favorably on a global scale.

Namibia benefits from an exceptionally high incidence of solar irradiance, averaging approximately 300 days of sunshine annually, thereby establishing solar energy as a strategic priority for the renewable energy sector[98]. The country's elevated solar irradiation levels facilitate substantial opportunities for both photovoltaic (PV) and concentrated solar power (CSP) installations. Additionally, Namibia's southern and coastal regions exhibit robust and consistent wind patterns, thereby indicating significant potential for wind energy development. While wind energy deployment is nascent compared to solar initiatives, efforts are being made to augment wind power capacity[99].

Namibia maintains a pre-existing hydropower infrastructure, with the Ruacana Hydropower Station, situated on the Kunene River, functioning as the primary source of national electricity production. While hydropower represents a renewable energy modality, its efficacy in Namibia is constrained by water resource availability, which is notably influenced by precipitation patterns and susceptible to fluctuations arising from climatic variations.

Renewable energy sources comprise marginally above 30% of Namibia's total electricity generation capacity. The state is actively pursuing an increase in this percentage through various strategic actions and development projects designed to strengthen indigenous power generation capabilities. The Namibian government has achieved considerable progress in the promotion of the renewable energy sector through the implementation of several policy frameworks and development initiatives. The National Renewable Energy Policy and the Renewable Energy Feed-in Tariff (REFIT) program were established to stimulate investment in renewable energy technologies by offering long-term contractual agreements to independent producers of renewable energy. (IPPs).)[100]. A recent $138.5 million project approved by the World Bank focuses on improving the reliability of Namibia's transmission network and facilitating the integration of more renewable energy sources. This includes developing a second transmission line and a utility-scale battery energy storage system[101].

Namibia aims to reduce electricity imports from approximately 80% to 29% by 2028 while striving for universal access to electricity by 2040. The government envisions that by 2035, 60% of total electricity generation will come from renewable sources[102].

Namibia's aspiration to lead in renewable energy, notably solar and green hydrogen, necessitates the development of a skilled workforce to facilitate this transition. While the nation boasts substantial renewable energy resources, the realization of its potential hinges upon strategic investment in skills development across multiple sectors. A recent skills needs assessment has identified considerable deficiencies within the existing education and training infrastructure. The predominant provision of vocational training extends only to National Qualifications Framework (NQF) Level 3, thus constraining graduates' pathways to advanced education and specialized training essential for senior positions within the renewable energy domain[103]

Future skills- Renewable Energy

- **Engineers:** Systems engineers, grid connection engineers, electrical engineers
- Projects developers
- **Technicians:** Operation and Maintenance personnel, technical assistants
- Solar PV system Designers /Engineers
- Energy storage specialist
- Energy Efficiency Practitioners
- Wind Turbine Technicians
- Blade repair and composite materials
- Marine Biology and offshore operations

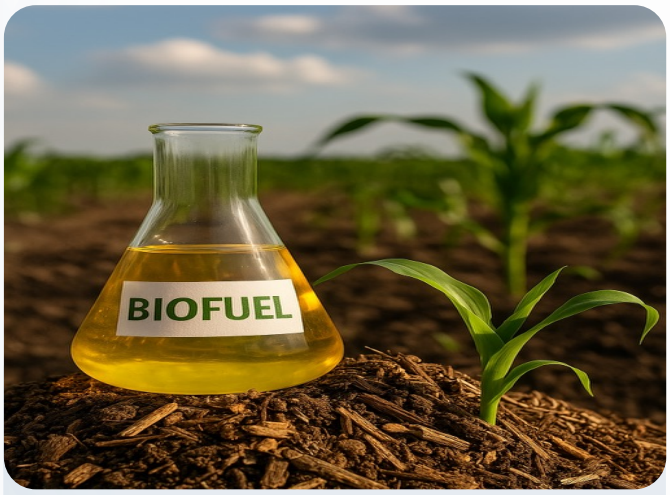
[98]https://ippr.org.na/wp-content/uploads/2024/09/Renewables-Policy-and-Practice-A-Look-at-Namibia-Web-.pdf
[99]IPPR- Renewables Policy and Practice: A Look at Namibia, 2024.
[100]Jan-Barend Scheepers, Namibia's Renewable Energy Feed-In Tariff (REFIT) Program, 1 year in . Economic Association of Namibia, October 2016.
[101]World Bank Group, 2024
[102]GET.transorm, 2024
[103]International PtX Hub, 2024

Future skills- Oil and Gas

- Reservoir engineering
- Petroleum and resource geoscience
- Geological modeling and simulation- proficiency in 3D geological modeling software
- Remote-operated vehicles for offshore oil extraction
- Deepwater drilling and subsea engineering
- High-pressure, High-Temperature (HPHT) drilling experience
- Gas plant operator
- Paraffin plant operator
- Still operator (still petroleum and natural gas refining)

Future skills- Green Hydrogen

- Hydrogen infrastructure Development
- Technicians: Electrolyser Operation and Maintenance
- Hydrogen Safety Specialists
- Hydrogen Fuel Cell Engineers
- Energy Efficiency Practitioners



Future skills- Biomass Energy

- Biomass Conservation Technologies : Expertise in biochemical, thermochemical and mechanical processes
- Operating and maintaining biorefineries, biofuel plants, power generation facilities
- Bioenergy Systems Integration
- Algal Biofuel Specialist

11.3.2 Agriculture

Agriculture is one of Namibia's most important sectors: Around 70% of the country's population depends directly or indirectly on agriculture for their income and livelihood, mostly in the subsistence sector[104]. Agriculture in Namibia plays a vital role in the country's economy and the livelihoods of its population, especially in rural areas. While Namibia is largely an arid and semi-arid country, with vast desert areas and highly variable rainfall, agriculture remains a key sector for food security, employment, and export earnings.

Namibia has four types of agriculture, these are subsistence farming, commercial farming, horticulture, and game farming & tourism. A large proportion of Namibia's population relies on subsistence agriculture, primarily in the northern regions. Farmers typically grow maize, millet (mahangu), sorghum, and pearl millet, along with keeping livestock such as cattle, goats, and chickens. The sector faces challenges from unpredictable rainfall, pests, and overgrazing.

Namibia's well-established commercial farming sector, primarily focuses on livestock (cattle, sheep, goats) and game farming. The commercial livestock sector is important for beef exports, with markets in Europe (especially the EU), South Africa, and other regions.

[104]GIZ- Sector Brief Namibia: Agriculture, 2022

Namibia also has commercial crop production, though on a smaller scale due to water scarcity. This includes crops such as maize, wheat, and grapes (for export markets, especially in southern Namibia). Moreover, In recent years, there has been a push toward increasing horticulture production to reduce reliance on imports. Key horticultural crops include vegetables (tomatoes, onions, potatoes) and fruits (watermelon, dates, grapes).

The Green Scheme initiative, launched by the government, promotes large-scale irrigation farming along perennial rivers like the Orange, Zambezi, and Kunene Rivers.

Future skills- Agriculture

- Agroecological Practices
- Cold chain management
- Drought-resistant crop cultivation
- Data analytics and farm management systems
- Remote sensing and drone technology
- Automated irrigation systems and robotic harvesters
- Hydroponics and Aquaponics
- Carbon sequestration techniques
- Genetic engineering
- Biotechnology in pest and disease management
- Farmers (potato farmer, rice farmer, cereal farmer etc.)

11.3.3. Tourism

Tourism is one of Namibia's most important industries, contributing significantly to the country's economy and providing jobs for thousands of Namibians. The country is known for its unique landscapes, diverse wildlife, and cultural heritage, attracting visitors from around the world. Namibia is a prime destination for wildlife enthusiasts, especially due to its successful conservation programs that have resulted in healthy populations of elephants, rhinos, lions, and other species. Moreover, tourism offers a cultural experience, tourists have the opportunity to engage with Namibia's indigenous cultures, such as the Himba, Herero, and San people, learning about their traditions, customs, and way of life.

Tourism is one of the fastest-growing economic sectors in Namibia and employs over 100,000 Namibians, especially from rural areas, making this sector an important employer that helps reduce rural poverty. In addition, Namibia's tourism sector is also one of the most competitive sectors in the world. The hospitality and tourism industry contributed N$5.2 billion (€ 270 million) directly to the Gross Domestic Product (GDP), which is equivalent to 3.5% of the total GDP and is responsible for 44,700 of direct employment in the sector, including over 2,900 tourism-based jobs created in community conservation areas in 2018. (GIZ, 2020)[105].

The tourism industry is a vital part of many economies, requiring a diverse skill set to meet the dynamic needs of both tourists and operators. As tourism evolves, skill requirements shift to focus on sustainable practices, digital proficiency, cultural sensitivity, and innovation in customer experiences.

Future skills- Tourism

- Digital Marketing
- Data analysis and customer insights
- Virtual and augmented reality for tourism
- Green transport (Electric vehicle)
- Drone operation and Aerial photography
- Chef

[105]GIZ. (2020, December). Sector Brief Namibia: Tourism. Retrieved October 12, 2023,

11.3.4 Transport and Logistics

Given Namibia's strategic location in southern Africa, access to neighboring countries, and established infrastructure, the transport and logistics sector is a significant driver of the nation's economic growth. Namibia functions as a crucial gateway for the transport of goods to and from Southern Africa, with the Port of Walvis Bay and extensive road and rail networks serving as integral components. The country possesses a highly developed road network, featuring well-maintained highways that connect key domestic regions and international neighbors. Notably, the Trans-Kalahari Corridor, linking Namibia, Botswana, and South Africa, and the Trans-Caprivi Corridor, extending from Walvis Bay to Zambia and the Democratic Republic of Congo, facilitate efficient cross-border road transport.

Namibia possesses a significant asset in its deep-sea port at Walvis Bay, which facilitates cargo handling for the nation as well as adjacent landlocked countries such as Botswana, Zambia, and Zimbabwe. The Namibian Ports Authority (NamPort) administers the port, which is currently undergoing expansion and modernization initiatives to accommodate greater cargo volumes and larger vessels, with the objective of establishing a logistical hub for the southern African region. Furthermore, the railway system, operated by TransNamib, plays a crucial role in the transportation of goods across Namibia and to the port. Nevertheless, infrastructure upgrades and expansion are imperative to enhance capacity and ensure safety, as certain railway infrastructures exhibit signs of obsolescence.

The Namibian tourism sector encounters several challenges. Although the road network is well-developed, the rail infrastructure requires modernization to effectively and safely manage contemporary cargo demands. Alongside the issue of aging infrastructure, logistics profitability is affected by fuel prices and operational costs. Given Namibia's substantial reliance on road transport, variations in fuel prices can considerably influence expenditures. Furthermore, there is a deficiency of skilled experts in specific logistics areas, such as supply chain management, customs, warehousing, and emerging technologies.

Future skills- Transport and Logistics

- Digital and data analytics skills- advanced data, & predictive modeling
- Supply chain automation and robotics
- Drone operation and aerial logistics
- Cybersecurity and data protection
- Artificial intelligence and machine learning - includes demand forecasting, route optimization, and autonomous vehicle control
- Blockchain for supply chain transparency
- Multimodal and international logistics management
- Augmented reality (AR) for maintenance and training.

11.3.5 E-Commerce

Electronic commerce, commonly referred to as e-commerce, encompasses the facilitation of transactions involving goods or services via the Internet. This sector comprises a variety of operational frameworks, including retail, wholesale, dropshipping, crowdfunding, and subscription-based models. The e-commerce industry has experienced substantial growth, propelled by technological advancements that have enhanced the accessibility, user-friendliness, and security of online purchasing platforms. Four principal e-commerce models can be identified. Business-to-Consumer (B2C) represents traditional online retail, wherein organizations engage in direct sales to individual consumers, as exemplified by entities such as Amazon, Alibaba, and various domestic online retailers. Business-to-Business (B2B) involves transactions between organizations, typically in large quantities, such as manufacturers supplying retailers. Consumer-to-Consumer (C2C) denotes transactions between private individuals, frequently conducted on platforms like Facebook Marketplace. Finally, Consumer-to-Business (C2B) pertains to scenarios where consumers offer products or services to organizations, a model evident in influencer marketing and crowdsourcing[106].

[106] Lutkevich, B., Chai, W., & Holak, B. (2022, June 13). E-commerce. CIO. Retrieved October 16, 2023, from

The e-commerce sector in Namibia is currently experiencing a growth trajectory, underpinned by substantial potential arising from expanding internet access, a demographically youthful and technologically adept population, and increasing smartphone penetration. An emergent landscape of online marketplaces, including Namshop, Shopnam, Tap A Meal, and Ongoma, now provides a diversified range of commodities encompassing electronics, apparel, and groceries. Furthermore, the national payment infrastructure is undergoing enhancements, with platforms such as PayToday, e-wallet, and BlueWallet contributing to mitigating Namibia's dependency on cash transactions. Nevertheless, impediments related to online payments persist, largely attributable to restricted access to credit card facilities and online banking functionalities for certain segments of the population. Additionally, the logistical framework is confronted with complexities and increased costs stemming from Namibia's expansive geography and sparse population distribution, particularly with respect to deliveries to rural regions. Notwithstanding these challenges, entities such as NamPost and private courier services are actively adapting to augment and optimize delivery modalities.

Future skills- E-commerce

- Advanced digital marketing and SEO
- Data Analytics and Customer insights
- User Experience (UX) and web design
- FinTech knowledge
- Customer relationship management (CRM)- Salesforce, HubSpot
- Voice commerce

11.3.6 Chemicals and Basic Materials

The chemicals and basic materials sector comprises industries engaged in the discovery, extraction, and processing of raw materials essential for a diverse array of products and services. This sector holds a foundational role in the global economy, providing materials for manufacturing, construction, agriculture, and other critical sectors.

The chemicals and basic materials industry is an integral component of Namibia's economic landscape, presenting substantial opportunities for growth, employment generation, and sustainable development. As the nation endeavors to diversify its economy and mitigate dependence on conventional sectors, the imperative of cultivating a proficient workforce in this domain becomes increasingly salient.

Namibia's chemical industry remains nascent, with current production predominantly centered on cleaning and painting products. Nevertheless, the country possesses the potential to expand its chemical industry, particularly within the salt value chain. Namibia is the preeminent producer of solar sea salt in Sub-Saharan Africa, and its arid coastal climate provides optimal conditions for cost-effective solar salt production. The chemical industry ranks among the top ten sectors for capital investment, as indicated by the Global FDI Report of 2022 for Greenfield Investments, with a valuation of US$12.02 billion. However, the industry's scale in Namibia is relatively limited, with considerable untapped potential for expansion, owing to the nation's globally competitive deposits of sea salt, abundant solar resources, and extensive sand reserves spanning 1500km of the Atlantic Ocean coastline, bordered by the Namib desert[107].

[107]Namibia Investment Promotion & Development Board : Sector Profile Chemical Industry

Future skills- Chemicals and Basic Materials

- Automation engineering
- Robotics operation and maintenance
- Digital twin technology
- Carbon management and reduction techniques
- Rehabilitation and land restoration knowledge and techniques
- Materials engineering for sustainability
- Nanotechnology application
- Cybersecurity in industrial systems
- Geological oceanographer

11.3.7 Metals, Mining and Adjacent Industries

Based on the 2021 Fraser Institute Annual Survey of Mining Companies, Namibia's mining industry ranks within the top ten in Africa regarding the Investment Attractiveness Index. The mining and quarrying sector constitutes a substantial contributor to the Gross Domestic Product (GDP), amounting to N$16 billion in 2020. Historically, this robust industry has been a primary driver of Foreign Direct Investment (FDI) into Namibia. Projections indicate an improvement in domestic growth commencing in 2022, primarily propelled by the diamond industry and recoveries within select tertiary industries. Notably, Namibia is the fourth-largest global producer of uranium oxide, with its primary export markets being power utilities in Central Europe, North America, and South-East Asia. Diamond mining has traditionally been the foremost sub-sector of Namibia's mining industry, positioning the nation among the top ten diamond producers globally. Furthermore, Namibia holds a leading position in zinc production and ranks as the fourth-largest exporter of non-fuel minerals in Africa. The mining industry is characterized by its advanced and sophisticated nature, with local equipment and service providers contributing an additional N$5 billion to the GDP in 2020. These service providers facilitate the distribution of essential foreign goods and services, including hauling vehicles, excavation equipment, furnaces, drill rigs, and various processing operations. The primary drivers in Namibia's diamond markets are the United States and Europe, with India and China emerging as increasingly significant entities[108].

Namibia holds a prominent position as a leading African destination for mining investment, with the mining sector making substantial contributions to national exports and economic stability. This industry is characterized by the production of a diverse array of minerals, which collectively constitute a significant proportion of the nation's export earnings. Nevertheless, the sector is confronted by a pronounced deficit in skilled labor, despite its considerable potential. The current labor pool exhibits inadequate training to satisfy the requirements of an expanding industry, thereby constituting a considerable risk to anticipated growth trajectories.

The mining and metals industry occupies a fundamental position within the Namibian economy, serving as a foundational element for economic growth, employment generation, and technological progress. As the nation sustains its appeal for investment and exploratory endeavors within this sector, the imperative for the cultivation of a highly skilled workforce cannot be overstated.

The skills deficiency within Namibia's mining sector is a matter of serious concern. The current employment figure in the industry stands at approximately 15,000 individuals occupying various roles. Anticipated sector expansion necessitates a significant increase in trained professionals across all hierarchical levels, encompassing both managerial and technical positions. This shortage impedes not only operational effectiveness but also constrains the nation's capability to fully utilize its abundant mineral resources. Additionally, a trend of young Namibians gravitating towards urban centers in pursuit of office-based employment, rather than pursuing vocations within the mining field, further intensifies the skills deficit[109].

[108]Namibia Investment Promotion and Development Board Sector Profile- Meals and Mining
[109]PCiBS- Mining in Namibia is looking for skills, 2022

11.3.8 Services (Digital & Global Business)

The services sector in Namibia, particularly in digital and global business, is experiencing a profound transformation with the potential to significantly reshape the nation's economic framework. As Namibia endeavors to diversify its economy and augment its global competitiveness, the integration of digital technologies and global business practices is becoming increasingly critical.

Namibia's progression towards digitalization has accelerated in recent years, characterized by substantial investments in digital infrastructure and initiatives designed to enhance digital literacy. With internet penetration exceeding 50% of the population, the government has acknowledged the imperative for a robust digital ecosystem. Strategic frameworks such as the Digital Namibia Strategy and the National ICT Policy are directed towards leveraging information and communication technologies (ICT) for economic growth and social advancement. These policies emphasize the enhancement of digital literacy, cybersecurity, and e-governance, which are indispensable for cultivating a digitally empowered society[110].

The Digital Transformation Center's establishment in Namibia represents an initiative to foster a supportive ecosystem for startups and small enterprises. This center facilitates digital innovation and skills enhancement, thereby intending to generate employment opportunities and bolster competitive capacity in the domestic market[111].

Future skills- Services

- Advanced Digital Marketing and SEO
- Data Analytics and Business Intelligence
- E-Commerce Development and Management
- User Experience (UX) and User Interface (UI) Design
- FinTech and Digital Payments Knowledge
- Cloud Computing and IT Infrastructure Management
- Digital Product Management and Agile Project Management
- Hydrographic surveyor

11.3.9 Machinery and Electronics

The machinery and electronics industry in Namibia is poised for significant growth as the nation progresses with digital transformation and endeavors to augment its manufacturing capabilities. This sector, encompassing a diverse range of activities from machinery production to electronic goods manufacturing, is critical in supporting Namibia's economic diversification initiatives and diminishing reliance on imported goods.

Namibia's machinery and electronics industry, while presently nascent, possesses considerable potential due to the country's strategic position within Southern Africa. The government has acknowledged the necessity of developing this sector as a component of its broader economic strategy. Initiatives such as the National Development Plan and the Harambee Prosperity Plan underscore the requirement for industrialization, technology adoption, and the enhancement of domestic manufacturing capacities.

The industry is characterized by a blend of local enterprises and international collaborations, which are essential for technology transfer and capacity development. Entities such as Namibia Engineering Corporation and Namibian Breweries have commenced investments in advanced machinery and electronic systems to optimize production efficiency and product quality. Furthermore, the emergence of local startups specializing in electronics, such as renewable energy solutions, exemplifies the increasing innovation within this sector.

[110] Digital Nation, 2024
[111] Digital Global; Digital transformation center Namibia

Notwithstanding its potential, the machinery and electronics industry in Namibia encounters several challenges. A principal impediment is the deficiency of skilled labor endowed with the requisite technical competencies to operate sophisticated machinery and systems. As enterprises adopt more advanced technologies, there is an imperative need for training programs focusing on engineering, electronics, and information technology.

Additionally, elevated import costs for raw materials and components can impede domestic production efforts. To mitigate this issue, the cultivation of partnerships between local manufacturers and international suppliers can potentially reduce costs through bulk procurement agreements or joint ventures.

Skills development is fundamental to advancing Namibia's machinery and electronics sector. Technical vocational education and training (TVET) programs are indispensable in furnishing individuals with the practical skills essential for excelling in this field. As observed by industry experts, nations that have effectively industrialized, such as Germany and Switzerland, possess robust vocational training systems that adequately prepare their workforce for technical careers. In Namibia, the integration of TVET into the national education framework from an early stage will facilitate the cultivation of a generation of adept artisans capable of propelling industrial advancement.

Despite the manifest advantages of skills development, Namibia faces challenges associated with a skills gap within its machinery and electronics workforce. Numerous companies report difficulties in securing qualified personnel capable of operating advanced machinery or engaging in high-technology manufacturing processes. To resolve this issue, it is imperative to foster collaborations between educational institutions and industry stakeholders. Such partnerships can facilitate internships, apprenticeships, and hands-on training opportunities that effectively bridge the divide between theoretical erudition and practical application.

Future skills- Machinery and Electronics

- Advanced Automation and Robotics
- Industrial Internet of Things (IIoT) and Smart Technology Integration
- Artificial Intelligence and Machine Learning
- 3D Printing and Additive Manufacturing
- Cybersecurity for Industrial Systems
- Advanced Data Analytics and Predictive Maintenance
- Renewable Energy System Integration

11.3.10 Communication & Technology

The Namibian communication and technology industry is undergoing a significant transformation, propelled by substantial investments in digital infrastructure and a dedicated effort to improve connectivity. In line with the nation's strategic positioning as a regional leader in this sector, the development of a resilient communication and technology ecosystem is of paramount importance.
Over the past decade, Namibia has achieved notable progress in its telecommunications sector. The government, in conjunction with private sector entities, has made considerable investments in the expansion of telecommunications infrastructure, resulting in increased mobile penetration and enhanced internet connectivity. Key stakeholders, including Mobile Telecommunications Company (MTC), Paratus and Telecom Namibia, have been pivotal in driving innovation, introducing services such as mobile money and cost-effective data packages that mitigate the digital divide and empower citizens.

Recent reports indicate that mobile coverage has reached approximately 85%, while internet penetration is around 51%. These advancements have broadened opportunities for both businesses and individuals, facilitating access to e-commerce, education, and e-government services. Initiatives such as the Namibia e-Services Portal exemplify the government's dedication to enhancing public service delivery through digital solution[112].

[112]Windhoek Observer; Digital strategy aimed at comprehensive transformation, 2024.

The Ministry of Information and Communication Technology spearheads Namibia's digital transformation, having initiated multiple programs to augment digital accessibility. Recent infrastructural investments encompass the deployment of 30 novel Radio Access Network towers to broaden network coverage in previously unserved regions. Furthermore, a substantial budgetary allocation for the creation of a Cybersecurity Incident Response Team demonstrates the government's commitment to protecting its digital infrastructure from contemporary threats[113].

Namibia's National Digital Strategy, a comprehensive five-year plan, is designed to direct the nation's digital advancement. This strategy prioritizes the development of an inclusive digital government, improvements to service accessibility, and the reduction of disparities between citizens and public institutions. Through the strategic application of technological advancements, Namibia endeavors to cultivate a digitally proficient populace capable of engaging fully in the global economic environment.

The significance of specialized competencies within Namibia's communication and technology sector is paramount. In alignment with the nation's objective to diversify its economic base and augment its industrial capacities, investment in targeted educational and training programs is imperative. By prioritizing skills enhancement through vocational training initiatives, fostering collaborative relationships between academic entities and industry stakeholders, and promoting cognizance of technical professions, Namibia can cultivate a resilient labor force prepared to address both present and future exigencies.

Ultimately, the provision of requisite skill sets will not only catalyze economic expansion but also empower Namibian citizens to capitalize on emerging opportunities within an increasingly digitized global economic sphere. Adherence to this strategic vision will position Namibia as a formidable contender in the communication and technology market, thereby contributing substantively to its overall economic milieu.

Future skills- Communication & Technology

- Threat Intelligence and Risk Management
- Ethical Hacking and Penetration Testing
- Cloud Solutions Architecture
- Hybrid Cloud Management
- Process Automation with Robotic Process Automation (RPA)
- Smart Contract Development
- Quantum Algorithm Development
- Quantum Cryptography
- Sensor Integration and Data Analysis

11.3.11 Culture and Creative Industry

The culture and creative industry in Namibia represents a vibrant and dynamic sector increasingly acknowledged for its capacity to stimulate economic growth, safeguard cultural heritage, and promote social development. This sector encompasses a diverse range of activities, including music, visual arts, literature, film, fashion, and digital media. As Namibia endeavors to capitalize on its substantial cultural resources, the necessity of cultivating expertise within this sector has become increasingly apparent.

The creative industry makes a substantial contribution to Namibia's economy, accounting for approximately 3% of the national GDP. This sector not only generates revenue and employment opportunities but also provides a platform for cultural expression and identity. The government's acknowledgment of creativity as a pivotal economic driver is essential for navigating the digital landscape and fully utilizing the nation's cultural assets[114].

[113]ITWeb Africa- Namibia launches telecom towers rollout project, 2024.
[114]The Namibian - A vision for a viable creative economy in Namibia, 2024.

Despite its considerable potential, the Namibian creative economy is confronted with challenges including restricted access to financing, insufficient infrastructure, and inadequate protection of intellectual property rights. Many artists encounter difficulties in monetizing their work due to outdated copyright legislation that does not effectively protect their creations. Addressing these challenges is imperative to fully realize the potential of the creative sector.

The culture and creative industry in Namibia offers substantial opportunities for economic expansion, cultural preservation, and social advancement. By prioritizing skills development through focused training initiatives, encouraging collaboration among stakeholders, and resolving extant challenges such as funding and the safeguarding of intellectual property rights, Namibia can establish a resilient creative ecosystem. As the nation persists in embracing its diverse cultural legacy while adapting to contemporary trends, empowering domestic talent will be pivotal in achieving this vision. Through coordinated efforts from government entities, private sector participants, and civil society organizations, Namibia's culture and creative industry can prosper, ultimately contributing to a more dynamic economy that celebrates its distinct identity at both the national and international levels.

Future skills- Culture and Creative Industry

- Advanced Multimedia Skills
- 3D Modeling and Animation
- AI-Driven Art and Design
- Coding for Creative Applications
- Non Fungible Tokens (NFT) Creation and Management
- Interactive Storytelling
- Script editors
- Screenplay writers
- Cultural Sensitivity in Content Creation
- Talent agent / managers
- AI Music Composition and Editing
- CGI/ Special Effect specialist
- Film writers, Editors and Producers
- Graphic design, Design Engineers, Fashion Designer, Visual Effects Engineers
- Film Directors, Producers,
- Marketing and PR
- National broadcaster and Distributor

11.3.12 Agroprocessing

The food industry represents a crucial sector of Namibia's economy, culture, and social framework. Characterized by its varied agricultural terrain and an increased focus on national food security and self-reliance, this industry is instrumental in sustaining livelihoods, improving nutritional standards, and fostering economic expansion. As Namibia aims to strengthen its domestic food production capacity and lessen dependence on imports, the strategic importance of developing a resilient food industry is paramount.

Substantial advancements have been made in Namibia towards achieving food self-sufficiency. Current reports indicate that the nation has attained a 55 percent self-sufficiency rate in domestic vegetable production and an aggregate of 45 percent in agronomic (grains) and horticultural (fruits and vegetables) crops. This achievement is due to the combined efforts of smallholder and large-scale commercial farmers collaborating to improve crop output, market accessibility, and sustainability[115].

The government has enacted several policies designed to foster domestic production, including the Market Share Promotion (MSP) Scheme, which mandates that importers procure a specific proportion of their products from local agricultural producers. These measures serve to safeguard domestic producers from the competitive pressures of less expensive imports and concurrently stimulate economic activity within the agricultural sector.

[115]Namibia Agronomic Board- Namibia celebrates food self-sufficiency, 2024.

The food industry is a vital component of Namibia's economy, offering substantial employment opportunities. Approximately 70 percent of the Namibian populace is dependent on agriculture, whether through direct or indirect involvement. This sector encompasses a diverse range of activities, such as crop cultivation, animal husbandry, fisheries, and food processing. Notwithstanding challenges, such as arid conditions and limited precipitation, the fortitude of Namibian farmers has resulted in amplified production in key areas, including maize, millet, and sorghum[116].

Projections indicate that Namibia's food production is anticipated to attain approximately $320.96 million by 2026, demonstrating consistent sectoral expansion. This augmentation is imperative for the assurance of food security and the curtailment of the nation's substantial food import dependence[117].

The agroprocessing industry of Namibia comprises agricultural activities, food processing, and distribution. This sector is vital for generating employment opportunities for a significant portion of the population and for ensuring food security. As noted by the World Food Programme (WFP), the development of skills to enhance local food production can contribute to reduced import dependence and improved nutritional quality of food supplies[118].

Future skills- Agroprocessing

- Food Biotechnology
- Value-Added Processing
- Plant-Based and Alternative Proteins
- Traceability and Blockchain for Food Safety
- Gastronomy and Food Presentation
- Nutrition Science and Dietary Management

[116]GIZ; Sector brief Namibia: Agriculture, 2022.
[117]ReoprtLinker: Namibia food manufacturing industry outlook.
[118]World Food Programme, 2024.

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RECOMMENDATIONS

12. RECOMMENDATIONS

The following is a summary of key recommendations emanating from the report:

01 Conduct a comprehensive policy and legislative review for 4IR (legislative review toolkit for use in review and formulation of assessing outdated, obsolete laws and gaps) to enable rapid technological advancement, global interconnectedness and to aid the reconfiguration of the labour market.[119]

02 Accelerate 4IR Infrastructure developments (build on ongoing efforts, expand ICT network coverage and access, and operationalise a Special Purpose Vehicle entity to deliver ICT infrastructure and services.[120]

03 Realign the Namibian Classification of Occupations to Labour Force surveys, economic sector to supply skills responsive to the labour market

04 HEIs and TVET institutions to develop short courses and certifications that are aligned to labour market demands to ensure re-skilling and upskilling

05 Establish Industry or Sector Based Committees that regulate and quality assure training from NQF Level 7 to 10.

06 The MEIYSAC and other collaborators should determine critical skills and provide a quota to HEIs to supply those skills to the labour market.

07 Incentivise learners to study STEM subjects through grants and scholarships to ensure a sufficient supply of enrollments to TVET and HEIs in STEM fields.

08 Increase teacher to learner ratio to avoid overcrowded classrooms and reduced personalized learning that will enable foundational skills like literacy, digital literacy and numeracy.

09 Namibia to embark upon education reform across all layers is necessary to provide for the future of work and the 4IR, from basic education to tertiary education and lifelong learning.

10 TVET to align curriculums, courses to current and emerging sectors, provide short courses and certifications that are responsive to the labour market demands.

[119] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf
[120] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

11 TVET to broaden digital access to transform their courses that will enable TVET graduates to participate in the emerging economic sector opportunities.

12 Align the growth strategies for MSMEs with National Development Strategies and economic sectors to enable MSME's to participate in the economic activities and to ensure sustainable development.

13 Establish a MSME Entrepreneurship Academy and design an incubation center to promote self employment. The center will offer business model development, business development services, and incubation programs with incubator certification. Implement customized business management and development training to lay a practical understanding of business.

14 Have a broad-based approach to digital literacy in Basic, TVET and HEI curricula and make it compulsory coupled with promotion of the acquisition of appropriate technical and digital skills for young people to enable them to take the full advantage of the new opportunities created through the transition to greener and more digital economies.

15 For Namibia to accelerate the implementation of theNational Internship Programme & Youth Tax Allowance Programme among the youth in the form of apprentices, students, graduates, school leavers for professional and industrial experience to enable the youth to transition in the world of work.

16 In terms of global fasting growing jobs, Namibia needs to develop mentoring and coaching programmes for General Managers and Supervisory roles to develop a leadership pipeline that can supply this skills category.

17 To address skills gaps and critical skills shortages, Namibia relaxes visa requirements for high-value skills not available domestically and enforce mandatory internships and apprenticeships.

18 There is a need to increase the frequency of labour force surveys, to inform the labour supply and demand in a timeous manner. Ideally, a quarterly LFS would be suitable to inform the required dynamics, but at a minimum, an annual LFS would be required.

[119] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf
[120] https://www.ncrst.na/wp-content/uploads/2024/06/4IRTF-Final-Report.pdf

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CONCLUSION

13. CONCLUSION

This report provides a thorough analysis of the skills supply and demand landscape in Namibia, highlighting a complex interaction of demographic trends, educational outcomes, labor market dynamics, and economic factors. Several critical findings necessitate urgent and coordinated intervention.

Namibia is confronted with a persistent and significant skills mismatch. Despite population growth and improvements in educational attainment, unemployment remains alarmingly high, particularly among youth, with a rate of 44.4 percent, and an overall unemployment rate of 36.9%. This contrasts sharply with widespread reports of skills shortages in key economic sectors. The gap is further widened by inadequate foundational skills, as reflected in the low percentages of learners meeting minimum (16.6%) and desirable (6.7%) reading literacy levels. This mismatch risks constraining economic growth and impeding diversification efforts. The issue is longstanding; a 2010 survey found that 96% of businesses reported skills shortages, especially in specialist roles within mining and construction.

The "State of Supply" analysis underscores the influence of population growth, education and training systems, and labor force characteristics on skills availability. Namibia's population has more than doubled since 1991, reaching over 3 million in 2023, intensifying demands on education, healthcare, and infrastructure. While access to education has expanded considerably since independence, challenges remain in educational quality-particularly in rural regions-and alignment between education outcomes and labor market needs. Population distribution, with Khomas region being the most populous and Omaheke the least, also affects regional skills availability.

The "State of Demand" assessment reveals a rapidly evolving environment driven by globalization, technological advancements, economic development, and the structure of national production. This necessitates a proactive and forward-looking skills development strategy.

Addressing Namibia's skills challenges requires a multifaceted, collaborative approach involving government, educational institutions, industry, and other stakeholders to align education and training with labor market demands, improve foundational skills, and support economic diversification.

To address these complex challenges, the report recommends a comprehensive, multi-faceted strategy:

Demand-Led Education: Align educational programs with labour market demands by enhancing Technical and Vocational Education and Training (TVET), promoting apprenticeships, and strengthening partnerships between educational institutions and employers. Curricula at all educational levels should be regularly updated to remain agile and responsive to current and emerging economic sectors, including digital literacy and Fourth Industrial Revolution (4IR) skills.

Occupations in Demand: Revise and develop occupations, qualifications, and specialized short courses that meet the needs of current and emerging economic sectors.

TVET Enhancement: Expand digital access to transform course delivery and improve Train-the-Trainer programs.

Youth Unemployment: Leverage the growing working-age population by focusing on targeted skills development and employment creation initiatives.

Industry Sector Skills Committee: Expand the mandate of the Industry Sector Skills Committees to ensure quality assurance in training and career pathways.

Critical Skills Identification: Develop a national system for identifying critical skills, supported by a strategic implementation plan.

This multi-pronged approach aims to create a responsive, skills-driven ecosystem that addresses labor market needs and supports sustainable economic growth.

The report concludes that concerted, collaborative efforts among the government, educational institutions, industry stakeholders, and the public are imperative to bridge the skills gap. By investing strategically in its human capital, Namibia can unlock its full economic potential, foster inclusive growth, and build a more prosperous and equitable future for all its citizens. Implementing these strategic interventions will empower Namibia to maximize its human capital, stimulate inclusive economic development, and cultivate a more prosperous and just future for all citizens. It is imperative that collaborative endeavors be undertaken to reconcile the disparities among education, vocational training, and the exigencies of the contemporary professional sphere. Immediate action is warranted to invest in human resources and provide individuals with the requisite competencies to address forthcoming challenges and capitalize on emerging opportunities.

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E-ANNEXURES

14.1

ANNEXURE A: OCCUPATIONAL LIST AND JOBS IN THE LABOUR MARKET
Occupational list and jobs in Namibia

14.2

ANNEXURE B: CRITICAL SKILLS IN THE OIL, GAS, GREEN HYDROGEN AND MARITIME
Critical skills in Oil and Gas, Green Hydrogen and Maritime

14.3

ANNEXURE C: FUTURE SKILLS - COURSES OFFERED BY INSTITUTIONS
Future skills in Namibia - Courses offered by institutions

NAMIBIA STATE OF SKILLS **DEMAND AND SUPPLY REPORT**

NOVEMBER **2025**

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